THE

AMERICAN JOURNAL

OF THE MEDICAL SCIENCES.

FEBRUARY, 1893.

THE CHOLERA IN HAMBURG IN 1892.

By F. Reiche, M.D.,
RESIDENT PHYSICIAN IN THE NEW GENERAL HOSPITAL, HAMBURG-EPPENDORF;

Translated by A. A. Eshner, M.D.,
OF PHILADELPHIA.

The most striking feature of the recent epidemic of cholera at Hamburg—the fifteenth from which the city has suffered since 1831—was its sudden, explosive beginning. There were not, as in previous epidemics, at first isolated cases of severe gastro-enteritis, to afford an opportunity of testing the resources of modern hygienic investigation in the recognition of the disease, the isolation of the patients, and the adoption of preventive and protective measures. Physicians, officials, and the community were first alarmed when a large number of cases appeared simultaneously in many widely-separated parts of the city. In this epidemic, in contrast with previous visitations, the low-lying districts of the harbor were not alone at first attacked.

To-day evidence is yet wanting as to the source of the first case. The manner in which the disease virus was introduced and the time at which the introduction occurred are still unknown. The city enters into commercial relations with all parts of the world. That the germ was not brought by way of the mainland would seem to be demonstrated by the fact that no cases occurred in any place situated between Hamburg and the two nearest countries in which cholera at the time prevailed, *i. e.*, France and Russia, before the outbreak of the epidemic in Hamburg

itself. Isolated cases that subsequently appeared in various parts of Germany, but which in no instance furnished the starting-point of an epidemic, could be traced to refugees from Hamburg. Whether the germ of the disease was brought by ships from Havre or from the Black Sea is not known; general opinion, however, inclines to the latter-named source, and in particular to Baku, whence the scourge had from the early part of June pursued its way northwestward over Russia to St. Petersburg. The suspicion, at first largely entertained, that Russian emigrants, of whom there were at the time large numbers passing through the city on their way to England and America, acted as carriers of the disease, was found to be entirely unsupported.

Although the portal of entry of the disease remains unknown, there is substantial evidence in explanation of its peculiar mode of extension. The simultaneous invasion at the beginning of the epidemic of parts of the city widely separated from one another, but especially the limitation of the epidemic within comparatively sharp lines, separating Hamburg from the neighboring cities of Waldek and Altona, which were exposed to the same conditions of air, and probably, also, of soil, but each of which has its own separate water supply, leads to the inference that the common water supply of the city is to be looked upon as the principal channel of dissemination of the germs of the disease.

The city receives its supply of water, unfiltered, directly from the river Elbe, at a point just above its extensive harbor. The danger implied by this fact becomes the greater when it is added that the sewage of the densely populated city is poured into this stream, and that the ebb and flow of the North Sea are perceptible at the source of supply. Waldek receives its drinking-water from an inland sea, while Altona derives its supply from the Elbe below Hamburg, but subjects it to a process of purification by a method of sand-filtration that has been in operation for many years. The water supply of Hamburg has thus been entirely inadequate and in the highest degree dangerous, furnishing conditions the most favorable for the existence of vegetable and animal life,[1] while the interior of the water-distributing pipes is lined with a heavy deposit of organic matter. An additional factor favorable to the development of the disease germs, *i. e.*, the comma bacilli, assuming their presence and constant renewal in the pipes of the water supply, is the existence of reservoirs with which, by municipal decree, all houses must be provided, as a precaution in case of fire, in order to equalize variations in pressure in the water supply and to facilitate a uniform distribution of the water from a central source. The reservoirs were often cleansed but carelessly and sometimes not at

[1] K. Kraepelin: "Die Fauna der Hamburger Wasserleitung," Abhandlungen des Naturwissenschaftlichen Vereins in Hamburg, ix. 1.

all, and the slimy deposit that formed at the bottom furnished a most favorable soil for the development of microörganisms of all kinds. Too much reliance was placed upon filtration of the water, which was practised in most households, even among the poorer class.

In the disposition to the occurrence of local epidemics thus created, those that seek in the water supply alone the conditions for the propagation of the disease would find the most important factor in explanation of the invasion of certain stories and certain houses of the same street, with the escape of others. It goes without saying that other influences, such as an irregular mode of living, lack of cleanliness, a failure to carry out the preventive and protective measures recommended, as well as crowding amid unfavorable hygienic conditions, entered into the determination of an attack. These must be considered in every epidemic in every city, and do not apply, as do the other factors, specifically to Hamburg. One other point must not escape mention, and that is the large number of crooked, dirty, densely populated streets peculiar to Hamburg.

All attempts to demonstrate unequivocally, by plating methods, the presence of comma bacilli in the water of either the general supply or the house reservoirs failed. This fact cannot be urged as an argument against the spread of the disease by way of the water supply, in view of the difficulty of detecting cholera bacilli in water. It seems to have been by a peculiar and unfortunate chain of circumstances that the disease germ found its way into the city just at a time at which the splendid new water-works that have for a number of years been in process of construction are approaching completion, which will in future provide water clarified and purified by a process of sand-filtration, and will at the same time permit the source of supply to be transferred to a point higher up the stream.

The extent to which those conditions of timely and local disposition, to which so much importance has been attached as a result of the epidemiologic studies of Pettenkofer, enter into the etiology of this severe and sudden epidemic cannot yet be determined. Conjecture is here given greatest rein, especially as the actual date of the first infection remains unknown, and also, in consequence, the length of time during which the virus remained latent or its presence was unattended with evil.

Mild attacks of diarrhœa, differing in no respects from the attacks of summer diarrhœa commonly observed every year, were of frequent occurrence in the weeks preceding the outbreak of the epidemic. As a matter of fact, during this time meteorologic conditions prevailed that, according to all previous experience, were most favorable to the spread of cholera, and that besides were extremely rare at and in the neighborhood of Hamburg. The weather of Hamburg, lying as the city does

between the North Sea and the East Sea, is generally variable, damp, and, even in midsummer, is seldom very hot; but in the second half of August, 1892, the weather for several days in succession was extremely sultry, with a clear sky and mild southerly and westerly winds. The few thunderstorms that occurred brought no relief. Between August 17th and 24th the temperature rose almost daily above 87.8° F. In conjunction with these conditions the water in the Elbe sank to a low level, and the ground-water level also fell. During the preceding months the precipitation had been unusually slight.

In consequence of the heat—perhaps, also, as a result of the presence at this time of an unusual proportion of salt in the water of the Elbe and in the drinking-water—many forms of animal life present in the water-pipes succumbed (Dr. Ahlborn); the otherwise sessile bryozoa were detached in large numbers, and, dying, furnished a favorable soil for the multiplication of germs of all kinds. A permanent decline in the temperature took place in the last days of August.

To what extent, in addition to the factors already considered, local disposition entered into the invasion of individual portions of the city will be discussed more fully later on. The conditions at Hamburg are not encouraging to a study of this kind; the city lies in part upon high, dry soil, and in part upon damp, marshy land. No final conclusion is to be based upon the fact that the proportionately larger number of cases occurred within the latter-named area, as it is largely populated by the poorer portion of the community.

Turning now to the course of the epidemic, it will be seen that the number of cases pursues a rapidly ascending line, with a moderately sharp decline, the highest point being reached on August 27th. Early in November three more cases were reported.

The population of the city may be estimated at 600,000 inhabitants. In the table 85 cases are recorded as having occurred before August 21st; these probably all occurred after August 15th.

It devolved upon the hospitals to make the diagnosis. A case admitted to the New General Hospital on the evening of August 16th, with pronounced symptoms of cholera, died on August 17th, and a post-mortem examination was made on August 18th. Immediate examination of the intestinal contents failed to afford positive evidence. This was, however, furnished subsequently by the plating process. In the second case, also admitted to the New General Hospital, and in which the post-mortem examination was made on August 22d, Dr. Eugene Fraenkel was able in the course of the autopsy, from an examination of the intestinal contents, to make an unequivocal diagnosis of Asiatic cholera. The diagnosis had been made with equal certainty in the Old General Hospital on August 21st, and in the course of the same day a considerable number of cases were admitted to this institution.

	Cases.	Deaths.
Up to August 20 . .	85	36
August 21 . .	83	22
" 22 . .	200	70
" 23 . .	272	111
" 24 . .	365	114
" 25 . .	671	192
" 26 . .	995	317
" 27 . .	1102	455
First week . .	3773	1317
August 28 . .	1028	428
" 29 . .	980	393
" 30 . .	1081	484
" 31 . .	857	395
September 1 . .	842	394
" 2 . .	810	479
" 3 . .	780	440
Second week . .	6378	3013
September 4 . .	679	293
" 5 . .	580	282
" 6 . .	490	258
" 7 . .	422	225
" 8 . .	350	157
" 9 . .	402	155
" 10 . .	439	178
Third week . .	3362	1548
September 11 . .	354	150
" 12 . .	384	142
" 13 . .	293	129
" 14 . .	313	103
" 15 . .	314	141
" 16 . .	397	141
" 17 . .	338	117
Fourth week . .	2393	923
September 18 . .	222	110
" 19 . .	234	110
" 20 . .	217	87
" 21 . .	198	79
" 22 . .	172	55
" 23 . .	158	67
" 24 . .	126	39
Fifth week . .	1327	547
September 25 . .	95	39
" 26 . .	77	33
" 27 . .	82	33
" 28 . .	75	23
" 29 . .	49	20
" 30 . .	58	16
October 1 . .	36	16
Sixth week . .	472	180
October 2 . .	33	9
" 3 . .	39	7
" 4 . .	30	12
" 5 . .	21	6
" 6 . .	20	4
" 7 . .	13	4
" 8 . .	14	4
Seventh week . .	170	46
October 9 . .	11	6
" 10 . .	8	1
" 11 . .	14	1
" 12 . .	8	6
" 13 . .	12	1
" 14 . .	12	6
" 15 . .	6	4
Eighth week . .	71	25
October 16 . .	5	1
" 17 . .	6	2
" 18 . .	3	1
" 19 . .	3	...
" 20 . .	1	3
" 21 . .	3	...
" 22 . .	3	...
Ninth week . .	24	7
October 23 . .	2	2
" 24 . .	...	...
" 25 . .	...	1
" 26 . .	...	...
" 27 . .	...	1
" 28 . .	...	...
" 29 . .	...	...
Tenth week . .	2	4
Totals . .	17,972	7610

The municipal authorities were apprised of the facts on August 22d; on August 23d a proclamation was issued to the people, together with information as to the means of protection and prevention to be adopted;

a short time later the schools and the river-baths were closed, and careful supervision of railway intercourse was instituted. Life in the harbor languished.

Both the New General Hospital and the Old General Hospital at once made provision for the reception of patients. The New General Hospital is situated in the suburbs of the city, having been erected a few years ago upon the pavilion system. It is well equipped, and generally accommodates 1600 patients. The Old General Hospital is a large building, constructed upon the corridor system, and possesses even a larger number of beds than the New General Hospital. Behind the New General Hospital stood six barracks, each provided with twenty beds, and its own commissary service and drug-store, in anticipation of an epidemic. These beds were rapidly filled, and additional room had soon to be secured. Convalescents were dismissed from the hospitals; those most ill were crowded into a few pavilions or wards; several small hospitals in the city and a number of dwellings rented for the purpose were prepared for the reception of patients not suffering with cholera.

Throughout the entire epidemic, notwithstanding the great demands made in the course of a few days upon the administrative and executive officers, upon the commissary department and upon the physicians, not a single patient was refused admission to the hospitals on account of want of room; and at no time was there any real difficulty in making provision for all that were admitted. Up to August 28, 29, and 30, when the tide of the epidemic began to ebb, it was at all times possible to find new room, to furnish clean beds and fresh linen, and with the aid of faithful assistants to provide well and promptly for patients, and to insure cleanliness and good and efficient nursing. Minor obstacles that occasionally arose are not worthy of consideration. By way of illustration: on September 2 there were in the Old General Hospital 1062 cases, and in the New General Hospital 1024.

Not before the first of September were barracks erected in various parts of the city: in the gardens about the Old General Hospital; in the harbor in connection with the Seamen's Hospital; and in the eastern and western parts of the city. On August 30th a schoolhouse, prepared in the course of twenty-four hours for the reception of 80 patients, was opened in the southeastern part of the city and placed under my charge. A field-hospital, with a capacity of 500 beds, furnished by the Minister of War, was erected adjacent to the New General Hospital, and close to this, on September 15, a barracks with a capacity of 250 beds was additionally provided. Physicians, nurses, and assistants had come from all parts of the German Empire with proffers of aid.

The ambulance service was somewhat more tardy in systematic organization. It was necessary to transport patients to the hospitals simultaneously from all parts of the city, at the remotest distances.

Notwithstanding the large number of conveyances impressed into this service, some little difficulty was at first experienced on account of the enormous number requiring transportation. The common transportation at one time of several cases of varying degrees of intensity was a not infrequent occurrence in the first few weeks of the epidemic. The system of transportation was directed from a central station, for only thus could it have been possible to direct the stream of patients to the one or the other of the two receiving hospitals, so that the other might meanwhile be afforded a few hours for rest, recuperation, and renewed preparation.

Sanitary stations were established in twenty different portions of the city, and in these were placed physicians whose duty it was to furnish first aid. Each station was provided with a disinfecting oven, by means of which wearing apparel, linen, and bed-clothing were sterilized in a current of steam. From these stations persons were deputed to visit the houses in which cases of cholera occurred, for the purpose of disinfecting the stools and the furniture, and to protect the remaining members of the family from infection. Disinfectants were gratuitously distributed among the people.

Burials took place directly from the hospitals or from provisional pavilions especially constructed for the purpose. Huge graves were dug in the Central Cemetery. In this connection there was some little difficulty at the height of the epidemic.

Among other measures adopted in the course of the epidemic was the sending through all the streets of wagons dispensing boiled or spring water; the boring of artesian wells; the cleaning of certain especially unhygienic quarters of the city; the organization of aid societies by the citizens, and the collection of moneys for the support of impoverished families.

The population maintained a praiseworthy calmness; readiness of aid and willingness of sacrifice characterized all classes.

As to the disease itself: a preponderance of severe cases at the beginning of the epidemic, with a moderation in severity as the mortality rate declined, was a marked feature of this epidemic, as it has been of previous extensive ones.

Two features characterized this epidemic in contrast with the majority of others: the absence of febrile temperature early in the attack and the conspicuously frequent absence of all prodromal symptoms, particularly the premonitory diarrhœa. Observations bearing upon the temperature were made in comparatively few cases; but neither I nor others, so far as I have been able to learn, observed in the algid stage greater differences between the temperature of the axilla and that of the rectum than are at all times present.

In the majority of cases, thus, the disease set in abruptly and at once assumed its full intensity, so that frequently, and particularly at the begin-

ning of the epidemic, profound collapse, with diarrhœa and cramps in the calves of the legs, speedily followed the initial vomiting. Cases of fulminant cholera sicca were common at this time. Individuals would be stricken upon the street, while at work, or during a meal.

The clinical picture presented by the disease did not differ from that presented in previous epidemics. A secondary febrile period, or so-called reaction, lasting from a few days to two weeks, appeared in the train of many cases of marked and of moderate severity, often without noteworthy disturbance of the general condition; but in a smaller proportion of cases, with more or less well-marked typhoid manifestations.

In isolated cases the spleen was found to be enlarged. In many cases of grave type the algid or asphyctic stage was followed by a profound and almost always lethal sopor, in many respects resembling the coma of uræmia, from which, however, it differed in the absence of all convulsive manifestations. In the cases under my observation the pupils were, under these circumstances, always contracted; œdema was absent; frequently there was marked restlessness; the pulse was tense and slow; the cheeks often presented a vivid blush. No changes were found in the few cases in which the eye-ground was examined (Dr. Moritz).

The urinary secretion was in part suppressed, in part represented by a fluid of low specific gravity and which had to be removed by means of the catheter. In the algid stage the anuria was typical; the resumption of the renal function constituted a good, though not absolutely favorable prognostic indication. The first urine passed contained for a short time albumin in varying proportion, together with hyaline tube-casts, epithelial cells, colorless and isolated red blood-corpuscles. Persistent albuminuria, with other symptoms of chronic nephritis, was extremely rare; it was present in none of the 376 cases under my care. Reducing substances were, however, sometimes present in the urine passed shortly after the algid stage.

Cutaneous eruptions were relatively common; they mostly resembled the exanthems of measles and urticaria, and were often attended with slight extravasations of blood, so that yellowish spots remained for several days after the disappearance of the eruption; only rarely were they distinctly hemorrhagic, taking the form of petechiæ. They appeared at variable periods in the course of the attack, involved trunk and extremities and were attended with but little itching; their appearance was not associated with any elevation of temperature, and they furnished no prognostic indication.

The temperature likewise afforded no guide in prognosis. Recovery took place in some cases in which the temperature had fallen as low as 93° F.

The stools were flocculent, at times resembling rice-water, at other

times stained yellowish; in elderly persons in particular, admixture of blood was common.

Metrorrhagia was frequently observed in women; abortion or premature labor was common in pregnant women. Advanced pregnancy and chronic alcoholism were most unfavorable complications.

True fibrinous pneumonia was encountered but exceptionally, and then unattended with febrile movement. Lobular pneumonia was infrequent; as was also the association with enteric fever and with scarlatina. Diphtheric and septic complications were likewise uncommon.

Full and careful statistics, in course of preparation by Professor Rumpf, Director of Hospitals, will shortly be published, and may be expected to illumine many of these associations and other interesting points.

From a therapeutic point of view the recent epidemic is remarkable for the fact that intravenous infusion was for the first time practised on a most extensive scale in many hundreds of cases, being not infrequently repeated a number of times in a single case. Besides this, subcutaneous infusion had warm advocates. Landois's method of centripetal arterial infusion was practised alone by Dr. Schede. When it is considered that these various procedures were employed only in the severest cases, the estimated percentage of recoveries (25 per cent.) will appear a fair one.

A 0.6 per cent. solution of sodium chloride was the one most commonly employed; at times a 0.1 per cent. solution of hydrogen dioxide (Dr. Rumpf) was used; less commonly mild antiseptics, such as thymol (Dr. Heinleth), were added to the solutions; in a number of cases slow infusion was conjoined with sweat-baths (Dr. Zippel). The volume of fluid infused varied from two to four pints; the temperature preferably 104° F. Unpleasant complications were not encountered; inflammation at the site of puncture, as well as septic embolism, in consequence of imperfect sterilization of the solutions and apparatus employed, was extremely rare. The immediate result of the infusion was always striking, as a matter of course frequently of but brief duration; renewed vomiting and renewed diarrhœa being followed by a reproduction of the cyanosis, the pulselessness, the dry tongue and the vox cholerica that had but disappeared.

Of other symptomatic measures hot baths proved efficacious in counteracting the cramps. Enteroclysis, by means of solutions of tannic acid after the method of Cantani, was in some cases attended with remarkable results.

Salol, which was universally used early in the epidemic, proved distinctly not of avail, given either by the mouth or injected beneath the skin in ethereal solution.

Calomel again earned much confidence for itself, and, given frequently

in minute doses (gr. $\frac{1}{60}$) or less frequently in larger doses (gr. jss,) often favorably modified the course of the disease.

The other intestinal antiseptics were all soon abandoned. Opium suffered a similar fate; given internally it seemed to do harm; in a small number of cases, given subcutaneously in aqueous solution in small doses, before the occurrence of collapse, it appeared to exert a favorable influence. For the vomiting, cocaine and chloroform, as well as irrigation of the stomach, were frequently employed, with satisfactory results.

When coma had developed (and its occurrence was not prevented by the infusions), all therapeutic measures, including sweat-baths, venesection, infusions, diuretics proved fruitless.

The treatment instituted in the algid stage by Prof. E. Klebs, by means of subcutaneous injections of anticholerin, a metabolic product of bacterial activity like tuberculocidin, and obtained from pure cultures of cholera-bacilli, is worthy of mention, and encourages the hope of further progress upon the same lines. The injection was followed by an elevation of the temperature during the attack, and a subsequent secondary febrile stage failed to appear. The proportion of recoveries is not at all unfavorable, but the number of cases treated with anticholerin is entirely too small for reliable conclusions to be arrived at.

Of fluids, much coffee, tea, and weak hydrochloric acid lemonade were given; carbonated waters seemed to induce vomiting. Ice was well borne; so also was oatmeal gruel with red wine. Injections of oil of camphor were almost universally employed as a stimulant.

The total mortality in the New General Hospital exceeded 50 per cent. The number of cases received into the various hospitals may be estimated as greater than 8000.

What has been said in the preceding has been drawn largely from observations made in the New General Hospital and in the infirmary under my care. In the remarks that follow upon the anatomic features of the epidemic the experience of the New General Hospital will be detailed. In this hospital 516 post-mortem examinations were made by the prosector, Dr. Fraenkel, together with his assistant, Dr. Deycke; in many cases only the abdominal viscera were examined.

In all cases the renal lesions described in previous epidemics (Griesinger, Cohnheim, Klebs) were found. These consisted in destruction of the secreting epithelium, particularly in the convoluted tubules, appearing at first as an acute swelling, and later as a direct disintegration and destruction of the protoplasm, as a result of which, in contrast with the conditions present in cases of coagulation-necrosis, the nuclei were well preserved. Macroscopically, the enlarged kidney presented a characteristic reddish-brown tint. In no case were there evidences of a productive inflammation. These changes appeared as early as a

few hours after the onset of the disease; in cases in which the attack was farther advanced many casts were found in the lumen of the uriniferous tubules. In a not inconsiderable number of cases, but never before the end of the first week, extensive fatty degeneration of the parenchyma of the kidneys was found; the organs were large and yellow, the dark bluish-red medullary substance presenting a marked contrast to the yellow cortex. Microscopically the epithelium was found to be in a condition of profound fatty degeneration, with the presence of large oil-globules, and bearing the closest resemblance to the changes found in cases of phosphorus poisoning.

The conditions found in the bowel corresponded with those that had already been described—death of the superficial epithelium, often with necrosis of the villi, and the penetration of the characteristic bacilli into the villous structures and the lumen of the follicles of Lieberkühn. The destruction of the epithelium was evident in examinations made as soon after death as possible, and was clearly a vital and not a cadaveric change. A well-marked diphtheritic process in the bowel was of less common occurrence.

Hemorrhagic infarction of the endometrium was observed in 65 per cent. of post-mortem examinations of adult women. In a number of these cases there was also hemorrhage into the stroma of the ovaries. A diphtheritic process was rarely found in the vagina, and still more rarely in the bladder.

In isolated cases degenerative processes were found in the muscles of the larynx and in the diaphragm (Dr. Boltz). Regressive changes were never found in the liver, though frequently in the heart muscle. Hemorrhages into the medullary tissue of bone appeared to be characteristic of recent cases.

Comma bacilli could not in any case be cultivated from the blood of internal organs, with the exception of the intestine. In one case in which the wall of the stomach presented superficial necrosis, invasion by typical bacilli was demonstrable.

Comma bacilli were looked for in all cases; as also in the many post-mortem examinations made by Dr. Simmonds at the old German Hospital —for the first time upon so large a scale in Europe. The conclusions of Koch were again confirmed throughout their entire range. In fatal cases the specific bacilli were found present in the intestinal contents until the eighteenth day of the disease; on the other hand, in some cases comma bacilli could no longer be found at a comparatively early date. From a study of their behavior in cultures in milk and in gelatin of varying degrees of alkalinity, E. Fraenkel[1] succeeded in demonstrating certain new biological peculiarities of the cholera bacillus. As the

[1] Dr. Eugene Fraenkel, Deutsche medicin. Wochenschr., 1892, No. 46, p. 1047.

epidemic began to subside it became possible to pursue the bacteriological diagnosis also clinically; in the last weeks of the epidemic this procedure was adopted in every case, both within the hospitals and without.

On account of the great demands made upon the time and resources of the physicians, it was not possible to study bacteriologically the large number of cases of mild and transient intestinal derangement that were particularly numerous at the beginning of the epidemic. That such cases are etiologically instances of cholera, as numerous clinical observations in this and in other epidemics would lead one to surmise, has already been demonstrated by Cantani[1] by the detection of cholera bacilli in the stools. This observation was confirmed in some cases at Hamburg and in some at Berlin.[2]

Most extensive investigations in this direction during an epidemic of cholera would have been necessary to have enlarged the range of our views concerning the specific infections, and to have furnished grounds for a positive conclusion as to the part played by the individual disposition to a definite and well-known disease poison. This important factor, in its intimate nature unexplained and unknown though it may be, cannot be ignored in any consideration of the doctrine of the contagiousness of certain bacteria.

A CASE OF CONGENITAL ELEPHANTIASIS OF THE SCALP.

By Pedro S. de Magalhaes, M.D.,
PROFESSOR OF THE FACULTY OF MEDICINE, RIO DE JANEIRO

Communicated by Patrick Manson, M.D.,
OF LONDON.

Care should be taken to avoid confounding in one and the same nosographical species all the various forms of elephantiasis; it is an error which has been committed by several observers, to try to generalize under the same scientific conception, in virtue of their etiology, all the forms of this morbid process.

It is certainly unreasonable to deny the causal influence of filariasis in the production of the endemic elephantiasis of warm countries because of the non-parasitic nature of certain analogous sporadic forms which are met with everywhere. But it seems to me equally gratuitous to suppose that every case and kind of elephantiasis occurring in warm countries has a parasitic origin.

[1] Berliner klin. Wochenschr., 1892, No. 37, p. 914.

[2] Ibid., No. 39, p. 972.

Contrary to what has been lately advanced by Dr. V. Gunson Thorpe,[1] R.N., and Surgeon-Major Lamprey,[2] *a propos* of a very remarkable case of dermatolysis of the scalp observed by the latter author at Sierra Leone, I do not believe that the hypothesis of a cause-and-effect relationship with any of the three species of filarial hæmatozoa of the negroes of the coast of Africa has been verified in similar cases.

Indeed, the form of elephantiasis described and skilfully figured by Surgeon-Major Lamprey is connected distinctly with the species of congenital elephantiasis, or of the elephantiasis of early infancy—which is really dependent on a congenital origin. The coexistence in the same individual of numerous cutaneous fibromas bears out the relationship of the affection observed in the scalp with the well-known fibroma of the skin diathesis.

The coexistence of congenital elephantiasis with multiple cutaneous fibromata, as also, indeed, the combination of the affection with multiple nævi, are established facts. Striking examples of the first class of cases are afforded by the observations of Billroth and Virchow, and of the second by the observation of Esmarch.[3]

The localization of congenital elephantiasis in the scalp is, however, sufficiently rare to justify me in adding a fresh case to those already recorded in the archives of science, of which that observed by Surgeon-Major Lamprey is one of the most remarkable.

This form of cutaneous hypertrophy, called "dermatolysis" by Alibert, "pachydermatocele" by Mott, and described by German writers under the name "Lappenelephantiasis," is sometimes associated with a deformity of the subjacent cranial bones, and sometimes it is not so accompanied. In the case observed and described by Alibert the pathological alteration of the cranial bones was evident.

The large number of surgical operations—twenty—which Prof. Billroth found necessary to remove incompletely the deformity induced by this affection in one of his patients, shows the difficulty there is in removing such growths on the head when they have acquired very large dimensions.

The patient of whom the likeness is reproduced in the accompanying figure was a native of S. Sebastio, in the State of S. Paulo (ancient province of the same name), Brazil. He was over twenty years of age when I first saw him, now more than twelve years ago; of the negro race, slightly mixed with white blood; he said he had carried his disease from earliest infancy. Although the pathological condition seemed to have existed at birth, its development had made slow but steady progress up to the time of my seeing it. The lateral half of the cranial vault

[1] British Medical Journal, February 6, 1892, pp. 305, 306.
[2] Ibid., January 23, 1892, pp. 173, 174.
[3] v. Esmarch und Kulenkampff: Elephantiasis.

FIG. 1.

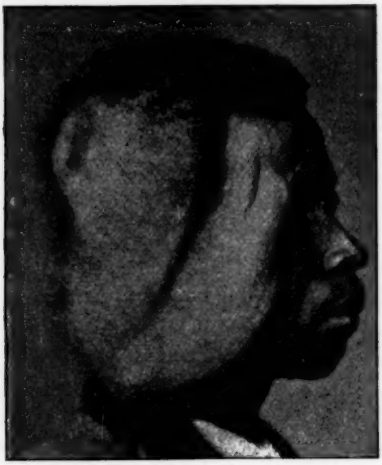
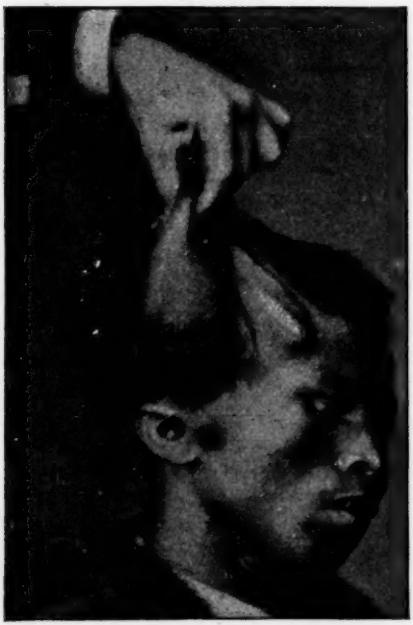


FIG. 2.



corresponding to the elephantiasis was manifestly deformed, and the deformity could be traced as far as the arch of the zygoma. I could not assess the influence the weight of the mass of elephantiasis had had in the production of the osseous changes; however, this influence appeared to me to have been very positive. The hairs growing from the elephantiased skin were many of them defective in pigment and in a state of canities, or, rather, of albinism, contrasting with the black color of the larger part of the woolly hair of the patient. The fold of hypertrophied skin could be lifted up, gliding smoothly over the subjacent parts; left to itself again it fell down by the side of the neck. In order to hide the hideous deformity as much as possible, the patient was in the habit of wearing his felt hat well cocked over on to the side of the tumor.

He had come to Rio de Janeiro with the intention of being operated on for his deformity, and he showed himself to several surgeons of the town and hospitals. Having been advised several times against surgical interference, on account of possible dangers, he became alarmed, and, changing his mind, returned to his own country in the same state as he left it.

Rio de Janeiro, September, 1892.

THE PRODUCTION OF THE FIRST CARDIAC SOUND IN MITRAL STENOSIS.

By W. Soltau Fenwick, M.D. Lond., M.R.C.P.,
PHYSICIAN TO OUT-PATIENTS AT THE EVELINA HOSPITAL FOR SICK CHILDREN; MEDICAL TUTOR TO THE LONDON HOSPITAL;

AND

Walker Overend, B.A., B.Sc.,
LATE RADCLIFFE TRAVELLING FELLOW, OXFORD.

Several theories have been put forward to explain the production of the sudden and abrupt termination characteristic of the true presystolic murmur. Dr. Sitra[1] ascribed its causation to the collision of the mitral valve segments by surfaces instead of by edges. Dr. Broadbent[2] thinks the peculiar modification has its origin in the walls of the left ventricle, the determining cause being the imperfect distention of its cavity, and an absence of resistance at the beginning of the systole. Dr. Dickinson[3] thought that the snap which immediately follows the presystolic murmur, occurs toward the end of the systole, that it is coincident with the carotid

[1] Hayden: Diseases of Heart and Aorta, 1875, p. 908.
[2] Journal of the Medical Sciences, 1886, p 68.
[3] "On the Presystolic Murmur," Lancet, October 1, 1887.

beat, and is occasioned by the closure of the mitral flaps. According to Dr. Acland,[1] the snap-like sound occurs at the commencement of ventricular systole, and is due to the increased rapidity of the ventricular contraction, coupled with increased sharpness of closure on the part of the tricuspid valve, and, at times, also of the mitral valve. Strümpell[2] tries to explain it by the theory that the difference between the abnormally slight tension of the mitral valve in diastole and its high tension in systole is relatively great. Professor Cantalamessa,[3] of Bologna, supports the latter view, when he states that in mitral stenosis, owing to the negative pressure in the left ventricle, the valves are at first extremely relaxed and then suddenly stretched, thus producing a sharp and sudden first sound.

It is evident, then, that the consensus of opinion places the seat of production of this intensified first sound in the left ventricle, although the various views differ as to the exact mechanism called into play. The discordance on this point clearly demonstrates that some doubt still remains as to its interpretation. It would, therefore, be profitable to ask ourselves two questions: first, whether there is a sufficiency of evidence to prove that the so-called "snap" is actually produced in the left ventricle, either by the contraction of the muscular fibres, or by a sudden tightening of the valvular flaps; and secondly, should the evidence prove inadequate, if there is not some other factor which is able to produce the same sound with equal facility and greater probability.

Now the sound in question, as we shall see later, is heard most plainly at the apex, or slightly to the right of it, and in period of time coincides with the first cardiac sound. It is also agreed that, in those cases where stenosis is associated with regurgitation, the systolic bruit appears to tail off from the abrupt finish of the presystolic.

None of these facts, or those advanced by Cantalamessa, appear to us sufficient to locate the sound in question in the left ventricle. In the first place, in cases of uncomplicated mitral stenosis, the left ventricle is generally in a state of atrophy, and the apex beat is formed more or less completely by the right ventricle, the walls of which have a progressive tendency toward hypertrophy; hence, in mitral stenosis, the maximum of intensity of the sound is, in reality, situated over the apex of the right ventricle. Secondly, the objections to the view that attributes the actual cause of the modified sound to the tension and vibration of the mitral curtains, lie in the fact that the left ventricle is particularly small, its walls proportionately thin; and as against Cantalamessa's view, the fact that the negative pressure in such a ventricle must become of less and less importance. But this is not all. Anyone who has watched such

[1] Lancet, July 20 and 27, 1889.
[2] A Text-book of Medicine, p. 267.
[3] La Riforma Medica, May 5, 1891.

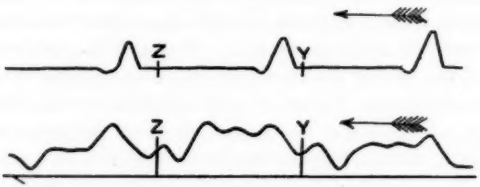
cases to their termination, must have found it somewhat difficult to believe that the mitral flaps, which after death appear shrunken, rigid and stiff, adherent, and often welded together into the form of a diaphragm, in which the auriculo-ventricular orifice appears as a mere slit, can possibly vibrate under any circumstances so as to produce the loud sound at present under discussion, especially when we know that these cases are often associated with an abnormally feeble action of the ventricle. On the other hand, there is no doubt that the accentuated first sound of mitral stenosis is really of a valvular nature. Professor Haycraft[1] has recently investigated the cardiac sounds anew, and demonstrated the fallacies of previous investigators. He shows most conclusively that the first sound of the heart is composed of two factors, of which the valvular one is the higher in pitch, and is the more important. Moreover, it is obvious that the tightening of the auriculo-ventricular valves must produce a sonorous vibration, since we know that it is the vibration of the semilunar valves that produces the normal second sound. The first sound, however, is accompanied by resonance tones of the chest, the stethoscope, and ear, produced by the shock of the contracting ventricle; and this is the sound heard in cases of bloodless hearts still beating. It is probable, therefore, that the intensified, somewhat high-pitched first sound in mitral stenosis is of purely valvular origin. Thirdly, in those cases where regurgitation is associated with a contracted mitral orifice, the systolic bruit appears to tail off from the sudden termination of the presystolic murmur, and the question arises, Is the "snap" coincident in time with the commencement of the regurgitant murmur? for, if this were the case, we find ourselves in the paradoxical position of attributing its production to the closure and vibration of the cusps of the mitral valve, which, at the same instant, are giving rise to regurgitation, *and therefore do not close at all.* As this is an important question, we have spent considerable time in endeavoring to accurately time the commencement of the systolic murmur, as well as the sound itself, on the cardiogram. The method employed was the same which we used to determine the rhythm of the presystolic murmur, and which was fully described in an article upon that subject.[2]

The annexed tracing was taken from a case of mitral stenosis in which the presystolic bruit was loud and rumbling with a pronounced first sound, from which, when listening at the apex, a soft systolic bruit appeared to commence. An inch to the left of the apex beat the snap was inaudible, but here the commencement of the systolic murmur was quite distinct. We timed the occurrence of the "snap" by listening slightly to the right of the apex, and then repeated the same experiment

[1] Journal of Physiology, 1890, vol. xi. p. 486.

[2] Lancet, October 26, 1889.

with the systolic bruit on the left of the apex. On comparing the two tracings, we found that in each case, both the "snap" and the commencement of the systolic murmur occur immediately after the ventricle commences its contraction, that is, just after the beginning of the upstroke of the cardiogram. In other words, *the two are themselves simultaneous in time.*



The lower tracing represents the cardiogram of mitral stenosis. On the upper tracing the elevations mark the time of the accentuated first sound; *y y*, *z z* are corresponding points.

We must insist, therefore, that the evidence in favor of the production of the snap-like first sound in the left ventricle in not only insufficient, but actually contradictory, and at the same time draw attention to another agent which, in our opinion, is both competent to produce the phenomenon, and is also supported by some amount of clinical evidence. We mean *the closure and tightening of the tricuspid valve.* The reasons for this conclusion are shortly as follows:

1. The character of the first sound denotes that it is of valvular origin. For its production, we should theoretically require thin vibratile valves, and a somewhat high tension in the ventricle. These requirements, though absent in the *left* ventricle, are conspicuously present in the *right.* The tension in the right ventricle is augmented from the first, and is kept up by the tendency to hypertrophy of its walls; while the character of the snap-like sound is just such as might be expected to emanate from the sudden tension and vibration of the three membranous and loosely attached flaps of the tricuspid valve.

2. In point of time we have shown that the sound is synchronous with the earlier portion of the first sound, and, therefore, with the contraction of the right ventricle as well as the left.

3. The position of maximum intensity of the sound corresponds to the right ventricle. In thirty-four cases of mitral stenosis, which we have examined with special reference to this point, the average position of maximum intensity of the "snap" was about three-quarters of an inch to the right of the apex-beat. Also, unlike the systolic mitral bruit, the intensified first sound appears to be conducted slightly upward and to the right, rather than to the left of the apex beat.

4. There are other items of clinical evidence which go to bear out this view of the origin of the "snap" in the right ventricle. It not infrequently happens that, in a case where the first sound is at first a well-marked feature, the right ventricle gradually gives way and signs of back pressure in the veins ensue. In such cases the rumbling presystolic murmur usually becomes markedly diastolic in time, and loses its definite character; at the same time the increasing distention of the right ventricle mechanically separates its valvular cusps, preventing their due closure and giving rise to a tricuspid, systolic murmur. No doubt, however, a slight amount of tricuspid regurgitation is compatible with persistence of the "snap." In a case which we have recently had under observation, the snap-like sound vanished with the establishment of tricuspid insufficiency.

In 1889 the patient was admitted into the hospital with well-marked symptoms of mitral stenosis, the first sound being greatly intensified. At the end of 1890 she was readmitted with signs of failure of the right side of the heart; the "snap" was then found to be inaudible, and a systolic murmur was distinct over the tricuspid area. On post-mortem examination, button-hole stenosis of the mitral valve was found, with immense dilatation of the left auricle and right chambers of the heart; while the tricuspid orifice was dilated to the size of a five-shilling piece. The left ventricle was abnormally small.

We must, however, mention, with reference to this point, that an objection to it lies in the fact, that, along with the production of tricuspid incompetence, the pressure in the left ventricle also sinks, since the tension in the left side of the heart in mitral stenosis is, to some extent, dependent upon the right ventricle. This objection, however, appears to us to have but little weight when the rest of the evidence is borne in mind. We must add that, on mentioning our views to Dr. Sansom, he informed us that he had long held a similar opinion as to the production of the sound in question, and has recently brought it prominently forward in his treatise upon the *Diagnosis of Cardiac Disease*.[1]

EARACHE AND ACUTE MIDDLE-EAR INFLAMMATION.

By B. Alex. Randall, M.A., M.D.,
Professor of Otology, Philadelphia Polyclinic; Clinical Professor of Ear Disease, University of Pennsylvania, etc.

Pain in or about the ear is a symptom of such frequent occurrence in general practice, particularly among children, that its comprehension and mastery ought to be a matter of course to every physician; and

[1] Griffin & Co., 1892.

the blunders which come to the notice of the specialist should be less numerous and striking. Yet the fact remains that nearly every practitioner has a different remedy—generally "ear-drops;" and time is nearly the only agent common to all. The urgency of the suffering seems to stamp the matter with a strong suggestion of entity, and all thought that various conditions may underlie it, and that the pain is best relieved by combating the cause, seems to be left for tardy recognition at best. Time will almost always bring remission, while hands, if not heads, are kept active in the efforts at relief; and when the patient gains a respite, the last measure tried is naturally credited with a victory which is all too tardy and must always be followed up to be secured. Cases are numerous in children, and occur in adults, where the localization is not evident, and pain and serious symptoms may long persist before the aural cause is suspected.

It seems, therefore, worth while to reiterate some rather elementary facts and simple suggestions, in the hope that prompt and surer aid may result to some of the numerous sufferers.

It is almost axiomatic in this connection that the pain is but one symptom of an inflammatory condition, and that the vague cloak of "neuralgia" ought to cover few cases, and only after thorough and repeated investigation. Yet it must be borne in mind that this inflammatory condition may be in the external as well as the middle ear; also that it may be merely referred to the ear from its real seat in tonsil, tooth, or other adjacent part. Many cases may demand careful search to reveal the truth, yet the majority may be readily traced to the ear and diagnosticated as to the exact condition. A touch on the tragus may at once indicate the tenderness present within the ear, and inspection, with any adequate light, may promptly show evidence of the inflammation; but the latter has its difficulties in young children, and concave reflector and speculum, carefully used, are often needed to give any idea of the exact condition. While the usual direction of the auditory canal in the adult is a little upward and forward as it passes inward, the child's canal has little bony portion to give it this direction, and the flaccid cartilaginous tube is generally pressed against the upward curving surface of the squama, and, even when drawn downward, gives less of a point-blank view of the membrana tympani than in the adult. In the later stages of a tympanic suppuration the child's canal is almost sure to be swollen from the irritation of the excoriating discharge; and even in the earlier stages such diffused congestive swelling is not uncommon in adult or child. This can easily be taken as the prime condition, rather than its consequence; and the deeper condition, which is difficult of demonstration, may be even unsuspected. Thoroughness in the investigation may seem a needless cruelty when a condition apparently adequate to explain the suffering lies patent to view, and, in some

cases, even the fullest study may fail to prove the involvement of the tympanum. Here, however, the rule of law should be reversed, and "not proven" *sound* should leave the doubt against the middle ear and call for treatment—that may be useless, but can hardly be of any disadvantage. In any case, then, of earache, the entire auditory tract should be investigated with all possible stringency and the exact seat and meaning of the pain learned, as the preliminary to treatment.

Often the physician is summoned to the patient at night, after the suffering has already greatly sapped the endurance and domestic medication has exhausted most of the patience. Speedy relief, with the minimum of investigation, is demanded, and any thought of cause and rational treatment is deprecated, because so much has already been suffered. The unreasonable part of this will be overridden, of course; but limitation of the study will at times seem necessary, and important or essential points may be all too easily overlooked unless some routine of examination be employed. It is essential to remember, therefore, that tympanic inflammation is present in the great majority of these cases, and its origin is almost certainly in the nose. A coryza, past or present, is always to be suspected, investigated, and treated, if we wish to combat the affection rationally; the other ear is to be examined, as all too probably implicated in less degree, or, if healthy, as furnishing at least some index in configuration and antecedent condition to what we should find on the painful side. Retraction, injection, scarring, or chalk deposits may throw light upon the present condition of the other ear and furnish records contradictory to a misleading negative history. Mere thoughtful inspection will often give valuable facts, such as redness or œdema about the ear, or the unsymmetrical prominence of one ear, suggestive of mastoid swelling; and palpation may reveal local heat, tenderness, or fluctuation, without being really noticed by the patient. The body temperature should not be overlooked, since a notable rise in it may be expected in the adult, as, of course, in the child, if the affection be important. In the stricter inspection the brow-mirror and good illumination are very desirable as rendering diagnosis surer, quicker, and gentler. The ear speculum, which too many regard as essential to the study, may often be dispensed with, and a sufficient study made without it; and it should be employed only when the attempt to avoid its use has failed. Warming it, if of metal, by friction or the flame, may mitigate the discomfort of its touch. It should be introduced with the canal straightened and opened by traction and the minimum of pressure used to place and retain it in position, although as an exception it may be used as a dilator. The condition of the meatus walls should, of course, be observed before its introduction, that swollen, tender points may be avoided, flakes or wax masses not displaced into obstructing positions, and the speculum correctly directed

at the first. The light spot upon the drum-head should be the first landmark sought, since its presence and normal triangular form would assure us at once of the polish and natural position of that part at least; then the short process and handle of the malleus should be studied, as telling of any congestion or of any bulging to conceal them. So, too, in the nose, posterior rhinoscopy may be impracticable, even for an expert, yet the condition be easily deduced from the appearance of the pharynx; and the anterior rhinoscopy, with an aural speculum or none at all, may give satisfactory data. Spraying of the nares with a mild cleansing agent, like Dobell's solution, should be expected when the practitioner is called to the case, and the atomizer taken, together with the Politzer bag, syringe, and forehead-mirror. Only after some such cleansing, which a mopping of the pharynx vault and tube-mouths with the curved cotton-carrier passed above the uvula will complete, is it wise to use the tympanic inflation, either for its diagnostic or its therapeutic effect. As to this measure, denounced as improper by some authorities, I can hardly be too emphatic in commending its careful employment. Thus only can we establish a diagnosis in some cases, while in so doing we may obtain great and real relief for the sufferer. Violent distention of an inflamed drum-head would, of course, be painful, and perhaps harmful; a thinned, distended membrane might be ruptured needlessly, and, if the naso-pharynx be unrelieved of a septic condition, deleterious matter might be forced up into the tympanum of either side. Yet fair cleansing before it, and gentle care in its use, exclude these risks; while it will often establish drainage by the natural Eustachian channel, rupture in the safest way a drum-head that needed opening, or evacuate through a small perforation a tympanum which could not otherwise be emptied. Even its careful use may give great temporary pain; but this may be more than compensated by the later relief, and our other methods of treatment can generally promptly end this suffering.

The best single measure at our command in treating the aural condition is usually hot syringing; for, while capable unaided of doing much to relieve at once the pain and its inflammatory cause, it fittingly combines, with the other measures, to meet all the needs of the case. As a means of cleansing the canal of epidermal exfoliations or anything else that obstructs our inspection of the walls or drum-head, it is probably, in all hands, the gentlest and best. To combat the vascular engorgement and stasis, whether of canal or tympanum, its stimulating and constringent effect can hardly be surpassed; and as a means of allaying the pain, that may be the most prominent and urgent symptom, it is surer and quicker than almost all others. Many medicinal drops are in vogue, but unless *warmed*, they generally fail in their purpose; heat may be well applied also by dry means, like the hot-water bottle or the salt-bag;

cotton upon the probe may serve excellently to clean out the auditory meatus: yet in all lines the one measure of hot syringing can rival, if not surpass, the combined value of the other three. Its temperature must be carefully adjusted to the purpose and the tolerance; "as hot as can be borne" is a good rule, flexible rather than vague, and adaptable to various cases. Gentleness in its employment is always called for, especially if used to allay pain, and the slowness of the flow greatly influences the tolerance which may be obtained for very hot water. The little bulb with a soft-rubber tip, generally obtainable, which can be safely passed a short distance into the meatus, is very useful for this hot douche; but any syringe can serve, and at need the bulb of the atomizer can be used for this douching, as well as in place of the Politzer bag. A pint or more of water can be used with advantage, and then the ear drained and lightly mopped dry; then a flake of cotton in the canal or a warm, dry compress over the entire ear region will protect against chilling. A child will usually be found in bed; an adult had better be put there; for needless as such precaution may seem to a busy man, it may make all the difference as to his escaping an imminent suppuration of the tympanum and mastoid. Aconite or similar general measures may be called for, a laxative or even a purge may be needed, and the control of pain may be aided by leeching or instillation of morphine and atropine. Cocaine is usually inferior in value, though it ought to deplete and anæsthetize the tissues, and either of the other drugs has more lasting effect; but combinations are perhaps better than the single medicament, of which water is the best vehicle. Oils, glycerin, or tinctures have much more disadvantage than value, common as is their employment. Blood-letting in the incipiency or very acme of the congestion is of the greatest value to relieve pain and avert serious results; but coming a little later, it rather favors vascular relaxation and retards resolution. Poultices are dirty and incomplete means of applying heat; need frequent changes, if they are not to favor suppuration, and will often macerate the external parts, with small gain to the deeper seat of trouble. Counter-irritation has similar drawbacks, unless it be a mere placebo of iodine stain; and a host of other popular means, while rarely devoid of value, are certainly of limited usefulness and considerable harmful potency.

In conclusion, then, it may be repeated that earache is most often due to acute tympanic inflammation arising from a naso-pharyngeal condition which demands treatment. Cleansing and detergent sprays and post-pharyngeal painting with astringents can control this and relieve any referred pain from this location. The hot syringing of the ear will give any needed cleansing, allay the local pain, and, by reducing the inflammatory congestion, help on the resolution. Protection, local and general, with medicinal treatment of general symptoms, will generally

give such prompt and real relief that the host of other remedies may remain as an unemployed reserve. The physician summoned to a case of earache can generally leave his morphine and cocaine at home, if he will take his brow-mirror, a syringe, and an atomizer.

HYDROTHERAPY IN THE TREATMENT OF NERVOUS AND MENTAL DISEASES.

By Frederick Peterson, M.D.,

CHIEF OF CLINIC, NERVOUS DEPARTMENT, VANDERBILT CLINIC, COLLEGE OF PHYSICIANS AND SURGEONS; ATTENDING PHYSICIAN NEW YORK HOSPITAL FOR NERVOUS AND EPILEPTIC; FORMERLY FIRST ASSISTANT PHYSICIAN AT THE HUDSON RIVER STATE HOSPITAL FOR THE INSANE.

In advocating a more general use of hydrotherapy in diseases of the nervous system and in insanity, I wish to forestall criticism by saying that I do not do so to the exclusion of other means of treatment, for we possess adjuncts of great importance in massage, Swedish gymnastics, passive and active machine movements, and dietetics, all of which are also deserving of much wider attention than is usually given to them. It is too well known that the mere administration of drugs, very valuable as many of them may be, and the employment of electricity, even if done scientifically, as is seldom the case, are rarely sufficient in themselves, especially in nervous diseases, to effect a cure.

Many of the scientific principles of hydrotherapy have already been established, but it would be well worth while to carry out at a few of our clinics and in the physiological laboratories some of those elaborate experiments with water which are frequently resorted to for the purpose of demonstrating the uses of new drugs. The "water treatment" certainly has many features which appeal strongly to our sense of rational treatment, for are we not able thereby to affect very markedly the local innervation, to dilate and contract vessels, alter the circulation in a part, change the distribution of the blood of the whole body, retard or accelerate the blood-current, weaken or strengthen the cardiac contractions, vary the amounts of secretion and excretion, increase heat radiation? And who can calculate to what degree we may thus influence the biochemical processes of the body, the metabolism of tissues, the carrying off of degenerated and toxic substances? or determine how much we may affect the vascular neuroses, the local anæmias and hyperæmias of the brain and spinal cord? We do wrong, therefore, not to properly investigate this agent, but to relegate hydrotherapy, as is so often the case in this country, to quacks who in some States are even without a medical degree, yet who still are known to cure many cases that find their way into their hands.

It would be well if some of our large schools would initiate a course of lectures on the subject.

In continental Europe the "water cure" has become of late a scientific remedy, one recognized as of great value, and everywhere—in asylums and hospitals, at health resorts, and in the cities—at the command of all physicians in private practice, are excellent means of making use of hydrotherapy where it is indicated.

I will here enter into details as to hydrotherapeutic measures only in so far as mental and nervous diseases are concerned; their manifold application in a great variety of general diseases, such as fevers, disorders of the stomach and intestinal tract, affections of the respiratory and circulatory organs, and the like, has become fairly well known in America, particularly through the earnest propaganda of Dr. Simon Baruch,[1] of New York.

In my tour of inspection of asylums for the insane in Germany, Holland, France, Belgium, Italy, and Austria, in the winter of 1886–1887,[2] I was surprised to find how universally hydrotherapy was employed in the treatment of certain conditions in insanity, and with what excellent results; and in a visit to the new insane asylum at Athens, Greece, in 1892, I was astonished to note how well equipped a hydrotherapeutic establishment it possessed, although situated in a country we are disposed to consider somewhat out of the track of modern progress.

On my return to America, in 1887, I put into practice, as well as means would permit, at the Hudson River State Hospital for the Insane, some of the principles of hydrotherapy that I had acquired abroad, but, as the facilities were quite inadequate, my hydrotherapeutic measures were limited to applications of warm and cold baths, brief or prolonged, the wet pack, wet compresses, and ice-bags. Nevertheless, I learned from observation and experiment how much could be accomplished in the treatment of insomnia, congestive conditions, states of mental excitement, restlessness, and the like, by even such simple measures, and understood how much more might be done were each asylum provided with means for the methodical, systematic, and scientific employment of the water treatment. As it is, I do not know of any asylum in America that is supplied with anything beyond the ordinary baths for purposes of cleanliness, and one of the objects of this article is to stimulate a more general consideration of the value of hydrotherapy by asylum authorities, with the hope that it may lead to installations of the necessary apparatus in most of these institutions in our land.

With reference to general nervous diseases, I am sure there is a tendency everywhere among neurologists to look with more and more

[1] Uses of Water in Modern Medicine. Detroit: Geo. S. Davis.

[2] "Some European Asylums," Am. Journ. of Insanity, April, 1887.

complacency upon this means of treatment as one of great value. I know that this is true in all parts of Germany, Austria, and France. In some conversations with Professor Winternitz, who, as is well known, occupies a special chair of hydrotherapy in the University of Vienna, I learned that in his practice of over thirty years' duration, fully three-fourths of his patients were sufferers from nervous disorders, and his remarkable success in relieving and curing bad cases is everywhere attested. I had the pleasure of visiting his large establishment for hydrotherapy, at Kaltenleutgeben, near Vienna, and of examining his methods and the apparatus he employs there.

I am aware that among my neurological colleagues in New York, also, there is a growing disposition to make greater use of hydrotherapeutic and mechanical treatment in nervous diseases, though the facilities for properly carrying out some of the procedures are still to some extent wanting.[1]

GENERAL LAWS.

The following are the ordinary effects to be borne in mind in the application of hydrotherapy to disorders of the mind and nervous system:

1. Cold and warm baths affect the central nervous system in a reflex manner by stimulating the sensory nerves of the skin and the vasomotor nerves, and thus influencing the cerebral circulation. Cold excites and warmth diminishes irritability when thus applied.

2. Short cold baths, especially when combined with sprinkling, showering, or rubbing, are powerfully stimulating, exhilarating, and tonic.

3. Prolonged warm baths, steam and hot-air baths, and the hot pack, are relaxing, fatiguing, and soporific.

4. A cold bath stimulates various reflexes in the body, such as peristalsis and the visceral reflexes in the sacral portion of the spinal cord.

5. Warm baths, by soothing peripheral nerve irritability, exert a calmative influence over the central nervous system. They mitigate reflex spasm and contractions in voluntary or involuntary muscle.

6. Cold applications to the skin stimulate vaso-dilator nerves, dilate the peripheral vessels, and increase blood-pressure. Warm applications also dilate superficial capillaries, but by diminishing the tone of the vessel walls they also reduce arterial tension.

7. To lower the irritability of individual nerves or of the entire nervous system, prolonged warm baths or the hot pack are indicated.

8. As many hydrotherapeutic measures tend to reduce temperature, it is important to remember that in non-febrile cases, in anæmic conditions, and in debilitated states, the temperature must be raised artifi-

[1] Since writing the above there has been established a Hydriatric Institute at 635 Park Avenue, with unusual facilities.

cially before subjecting patients to hydriatric treatment. In some cases the temperature of the body on rising from bed in the morning is sufficient; in others a short stay in the hot-box may be needed.

APPLICATIONS IN CONDITIONS AMONG THE INSANE.

Before entering specifically into this subject, I wish to call the attention of asylum physicians to the adaptability of the rain-bath for the general purposes of cleanliness among patients in their institutions.

The rain-bath was instituted in Vienna (although the originator was a Berlin physician) in public bathing-houses for the purpose of increasing bathing facilities, *i. e.*, by its use space could be economized, a greater number of people could be cleansed in a given time than by ordinary methods, fewer servants were necessary, greater cleanliness was attainable, and the dangers of contagion were minimized. This bath consists of a dressing-room for each person, a small room adjacent, where the bather can stand, and a gentle shower at low pressure, like rain, which descends upon him, washing him thoroughly from head to foot and flowing away at once upon impenetrable floors into the sewers.

In our large asylums, as is well known, one or at most two stationary bath-tubs are supplied for each ward containing thirty to forty patients. There is a regular bathing-day each week, and upon that day most of the patients take baths in a way which is not always beyond criticism. They are hurried and imperfect baths, and frequently, if not carefully watched, the attendants make several patients bathe in the same water before cleansing the tub. The cleansing is not often as thorough as it should be. Besides the baths given to all on regular bathing-days, the filthy patients, that is, those who soil themselves in bed or who smear themselves with filth, are bathed frequently every day. While every precaution is taken as regards cleanliness that can be taken by the asylum authorities, still one is inclined to doubt the perfection of such bathing arrangements, and it seems to me that the rain-bath system could be employed with even more advantage in these institutions than in the public baths of cities. I hope some of our progressive superintendents will initiate this change. They will find in New York examples of the rain-bath system, recently introduced through the able advocacy of Dr. Baruch, at the public bath-houses at No. 7 Central Market Place, at the Demilt Dispensary (corner of Twenty-third Street and Second Avenue), the Baron De Hirsch Baths, at Essex and Market Streets, and at the Juvenile Asylum. Another advantage of the rain-bath in asylums would be the prevention of injuries such as occur occasionally on putting excitable patients into the tubs, and the impossibility of scalding or suicide. Rare as these accidents may be, they have to be carefully guarded against under present arrangements.

A simple hydriatric chamber. This might easily be provided in each ward—or, at least, in one out of five wards—by slight alteration of the present bath-rooms. The walls would require protection by means of a rubber lining, or, better, tiles or marble, and the floor should be zinc-lined, tiled, cemented, or made of asphalt. Several rain-baths should be installed. There should be one stationary bath-tub. There should be several kinds of douches, connected with the hot and cold water pipes, and to this douche-apparatus should be attached a gauge for measuring the pressure. In summer the hydrant water is never cool enough for some purposes, and a small reservoir should be arranged (coils packed in ice) for obtaining cold water when required. A hot-air box is very useful. The equipment is complete when to these are added one or two foot-baths, a sitz-bath, several cooling-caps or ice-caps, Chapman's ice-bags, and a liberal supply of linen for wet-packing, dry-packing, wet compresses, and bandages.

It is very essential that such an establishment be put in charge of an intelligent nurse who would learn under the direct instruction of the physician in charge how to carry out properly every procedure.

The room should be capable of being heated when in use to a temperature that will feel agreeable to the bather when undressed. It is needless to say that patients should not be treated in a cold bath-room.

INDICATIONS AND METHODS.

For tonic and refreshing effects. A cold rain-bath (50° to 70°), the patient rubbing himself while in the bath. Duration five to ten seconds; or the half-bath in a tub at 65° to 75° Fahr., ten to thirty minutes. By "half-bath" is meant only six to eight inches of water in the tub, in which the patient lies and splashes about and is rubbed by an attendant. The object in both is to get the exhilarating and stimulating effects of the cold, and also the mechanical effect of the water impinging upon the skin. Such a bath should be taken every morning.

For powerful tonic, revulsive, and derivative effects. The cold douche increases reflex excitability, and causes hyperæsthesia of the skin. It is a powerful stimulus, mental and physical. By means of various nozzles it may be ejected in the form of a jet, a spray, a shower, a fan, and by alternating with hot and cold water we have what is known as the Scotch douche. Such procedures are indicated in lethargic and hysterical forms of insanity, where there is sluggishness of the intellect, apathy, stupor, catalepsy, etc., and in melancholic cases, and in all cases where there is anæmia, chlorosis, or gastric disorders.

To produce sleep. The prolonged warm whole bath is indicated. Temperature 70°–90°. Duration, one-half to two hours. When of long duration the patient may be suspended in a hammock made of a sheet. Indicated in cases of melancholia with excitement and in some maniacal

conditions. As a general hypnotic agent, however, applicable to all forms of insomnia among the insane, the hot wet pack stands foremost. It is applied in this way: A blanket 9 by 9 feet is spread upon the patient's bed, and upon this a sheet wrung out dry after dipping in hot water is laid. The patient lies down upon this, and the sheet is at once evenly arranged about and pressed around the whole body with the exception of the head, after which the blanket is also immediately likewise closely adjusted to every part of the patient's body. Other dry blankets may now be added as seems necessary. The patient remains in this an hour or longer; all night if asleep.

Maniacal excitement. In this condition we all know how important it is to control motor excitement as much as possible in order to prevent the metabolic waste that progresses only too rapidly in many cases, often leading to death from exhaustion in a few days. Formerly we were accustomed to fasten the patient in bed with a strait-jacket, and dose with hyoscyamine liberally, and this treatment undoubtedly saved many lives, but the fastening in bed has been to a great extent tabooed of late years. It is astonishing to note the good effects of hydrotherapy in many cases of this kind. The measures to be carried out are those indicated for insomnia. It is not often that patients laboring under great excitement can be placed in the warm bath, but the wet pack is applicable in nearly every case. It not only diminishes the erethism, but often brings about refreshing sleep, and always when kept applied prevents metabolic waste by motor excitement. I know of nothing that gives one better results in such cases than the wet pack in conjunction with overfeeding and occasional doses of hyoscyamine or duboisine if needed.

Congestive headaches. These headaches are quite common among the insane, and one of the best hydriatric procedures for their relief is a running water cold foot bath every evening. The object is to dilate the vessels in the feet, to derive the blood from superior parts. One must, therefore, prescribe a prolonged foot-bath, accompanied by rubbing and chafing of the feet for the mechanical effects of the water; or a strong fan douche of cold water applied to the feet very soon dilates the vessels and warms and reddens the feet. Actual experiment has shown that the temperature in the auditory meatus is lowered as much as one degree by a cold foot-bath, and conjunctival vessels have been observed to contract.

Constipation. In the atonic condition of the intestines in most cases of melancholia and in some other forms of insanity, a powerful stimulus to peristalsis will be found in pouring water over the abdomen when the patient is in a tonic half-bath of low temperature.

APPLICATION OF HYDROTHERAPY IN NERVOUS DISEASES.

The methods of using hydriatric measures for the purpose of a powerful nervine tonic and derivative, and to produce sleep and soothe nervous

excitement and irritability, have been described above. I will add here some of the special indications in various nervous disorders in a brief and practical summary, alphabetically arranged.

Anæsthesia (cutaneous). Short cold jet and fan douches of strong pressure to the anæsthetic areas. Temperature, 50° to 70°. Duration one minute. Daily.

Angio-paralytic hyperidrosis of the feet. Prolonged cold foot-bath with chafing, or fan douche of cold water to the feet. Temperature, 60°. Duration twenty minutes for bath, five minutes for douche.

Chorea. Cold plunge beginning at 90°, daily reducing until 70° is reached.

If anæmic, spinal spray, jet or fan douches, at first warm until patient becomes accustomed to them, then gradually reduced to 60° or 50° (Duval).

Epilepsy. Cold shower baths and cold sponge baths daily are beneficial. The shower baths should be rain-like in character—that is, not too forcible.

In many cases a morning and evening bath (the "half-bath") proves very serviceable. The "half-bath" is taken in a bath-tub only half filled with water, and when taken should be accompanied by energetic rubbing of the patient by an attendant. This bath lasts five minutes, and the temperature should not be under 50° and not over 70° F.

Where there is evidence of hyperæmia and increased blood-pressure in the head, the cold cap is useful.

While these are the general indications for hydrotherapy, certain measures are often of use at the time of seizures. During a fit or during a *status epilepticus* it will be observed that there is one of two vascular conditions present: either the face is pale and there are signs of brain anæmia, and in this case warm wet compresses should be applied to the head and genitals, accompanied by friction of the trunk upward, the body being placed with head low and arms uplifted; or there is turgescence of vessels in the head, the face is red, the carotids beat strongly, and under such conditions a contrary procedure is indicated—cold compresses to the head, neck, and genitals, strong wet beating of the feet, with a high position of the head. Daily applications for thirty seconds.

Headaches, neuralgias, and migraines. If *anæmic*, heating cephalic compresses (wring out thin linen bandages in very cold water; wrap head in capelline manner, and cover with one or two layers of dry linen or flannel). Apply at bedtime. Upon removal, envelop head in dry cloth and rub it dry.

If *hyperæmic*, leg bandages (a piece of towelling a yard long is dipped in cold water at one end—one-third—thoroughly wrung out and wrapped closely about each leg, so that the wet surface is next the skin

and the dry portion envelops the wet two or three times. Or, wet stockings may be put on and covered with dry towels). These are applied at bedtime and retained through the night.

In many headaches, especially of a congestive character, a prolonged cold foot-bath (twenty minutes, 60°) or the fan douche to the feet (five minutes, 60°) is very palliative.

Hysteria. For *erethetic type:* Wet pack, 60° to 70° for one hour or more, followed by massage (Putnam Jacobi); or the rain-bath at 75° to 65° for thirty-five seconds daily at twenty pounds pressure (Baruch).

For *depressed type:* Cold affusions while standing in warm water, or hot-air bath, followed by rain-bath for thirty seconds at 85°, daily reducing until 60° is reached, this to be followed by spray douche for five seconds at 65°, or jet douche for three seconds at 65° to 55°. Reduce douche gradually to 50° or less, increasing pressure from two pounds to thirty (Baruch).

Hyperæsthesia (cutaneous). Long-continued cold douches to affected area. Daily twenty minutes at 70° to 80°.

Insomnia. Wet pack; see above.

Impotence. Brief cold sitz-baths. Daily, 56° to 64°, one to five minutes. The psychrophore, *i. e.*, application to prostate of cold by a rubber condom or bladder secured over a rectal irrigator *au double courant.*

Incontinence of urine. In paresis of sphincter or detrusor brief cold sitz-baths, daily, 56° to 64°, one to five minutes. Cold rain-baths (50° to 60°) and douches as general tonics.

In spasmus detrusorum vesicæ, on the contrary, prolonged lukewarm sitz-baths, daily, thirty to sixty minutes, 70° to 90°.

Locomotor ataxia. Prolonged warm baths, five to twenty minutes, 86° to 95° (Leyden). Hot-air baths to lower extremities followed by affusions or douches, 60° to 70° (Hoeplein).

Neuralgia of all types, especially tic. Hot-air bath, to perspiration, every other day, followed by gradually lowered douches (Baruch, Duval).

Sciatica. Hot-air bath till patient perspires, followed by cold plunge, or douche gradually lowered to 65°.

Spinal-cord affections. In various chronic diseases of the spinal cord the daily half-bath, 65° to 82°, six to ten minutes' duration, with affusion and chafing, will be found useful. In some cases of compression and injury to the cord, in myelitis, and the like, where there is paralysis of the rectum and bladder and formation of bedsores or trophic lesions, resort may be had with advantage to the permanent bath (Riess). A sheet fastened in a bath-tub makes a hammock in which the patient lies at first for an hour or so daily, later all the time, except at night, when

he is put to bed. The water is kept at a temperature agreeable to the patient (88°).

Spinal irritation. "Douche filiforme" as a rubefacient and epispastic along the spinal column; or rain-baths, 65° to 85°, and douches.

Spermatorrhœa. Cold sitz-baths, five to twenty minutes, 50° to 70°, daily at bedtime; contra-indicated in sexual irritability and active pollutions, where prolonged warm or hot sitz-baths at 90° to 98° should be used.

Finally, I need scarcely say that if the alienist and neurologist are to make use of hydrotherapy at all, it must be borne in mind that precision of method is absolutely essential. As much care is necessary as in the prescription of drugs; for any violation of the principles or neglect of the modes determined by long experiment and experience is certain to be followed by unfortunate results.

201 West Fifty-fourth Street.

METHODS AND RESULTS IN CASES OF NEOPLASMS, VESICAL CALCULI, AND DISEASES OF THE BONES AND JOINTS.

By J. William White, M.D.,
Professor of Clinical Surgery, University of Pennsylvania; Surgeon to the University and German Hospitals, etc.;
and
Alfred C. Wood, M.D.,
Assistant Surgeon, University Hospital; Instructor in Clinical Surgery, University of Pennsylvania.

(*Continued from page 58.*)

MALIGNANT TUMORS OF THE BREAST.

Excision of the breast for carcinoma has been performed thirty-five times during the period embraced in this report.[1] All of the cases recovered. Some of the patients were operated on while the cancers were still small; in most, the disease was well advanced. In performing the operation the usual elliptical incision was made, one extremity terminating in the axilla, and thus permitting of free access to this region. The breast was invariably entirely removed, and all affected skin sacrificed. The axillary glands were removed in every case, whether involved or not, principally by the use of the finger. The wounds were usually drained for twenty-four hours, and with few exceptions they healed by

[1] Sixteen cases have been operated upon by Dr. White at this writing (November 19th) since October 1, 1892, but are too recent to include in this series. It may be stated, however, that in all there was union by first intention.

primary intention; the average time required for healing was about ten days. Many cases were completely healed in six days.

The observation that in a few cases operated on several years ago and in which suppuration occurred, the proportion of permanent cures is unusually great, has led Dr. White to suggest that possibly free suppuration may at times give an added security against recurrence, acting very much as would a strong irritant applied to the wound surface, *i. e.*, exciting an inflammatory reaction which may destroy the comparatively vulnerable cancer cells beyond the areas reached by the knife.

In clearing out the axilla the glands were removed from beneath the pectoralis minor up to the clavicle. The axillary vein is the only vessel which is liable to injury. When possible, this vessel was exposed at once. Its exact position being known, the danger of wounding it is much lessened. In one case (not included in this series) its walls were infiltrated with cancerous growth. The diseased portion of the vein was resected, ligature being applied above and below. The patient made an uninterrupted recovery. The danger of opening the axilla has been magnified by some writers. In Dr. White's experience, which includes a large part of that of the late Dr. D. Hayes Agnew, an accident from this procedure has not been met with.

The only points in dispute at the present day in relation to the surgical treatment of breast cancer have regard to the extent of the operation. Butlin (*Operative Surgery of Malignant Diseases*) has advanced what seem to him good reasons for believing the removal of the entire breast to be unnecessary. Gross, on the contrary, recommended not only the removal of the whole breast and the cleaning out of the axilla, but also the sacrifice of all the skin covering the affected glands, leaving a large surface to heal by granulation.

As to the latter method, Dr. White believes that the "dinner-plate" incision involves an unnecessary sacrifice of skin, which subjects the patient to the prolonged and tedious convalescence attending a large granulating wound, and that it does not add anything to the security of the patient against recurrence. An elliptical incision which includes all affected skin best fulfils the requirements.

Although Mr. Butlin has probably made his position as strong as it is possible to do in objecting to the removal of the entire breast as a routine practice, still his arguments are not convincing. The tendency of malignant growths to extend beyond the possibility of recognition by the eye or the touch, and even by the microscope, is so well known that it seems the obvious duty of the surgeon to remove every particle of such tissue in the immediate vicinity of the growth that can be taken away without undue mutilation or deformity, and with a reasonable degree of safety to the patient. For these reasons, in this service the entire breast has been removed in every case of malignant disease.

The same argument holds good with regard to the necessity for cleaning out the axilla. It is impossible by the touch to detect slight glandular enlargements in the mass of axillary fat, before removal, that are very apparent to the eye and may be distinctly felt after being removed. When the glands have become so enlarged as to be readily felt through the skin, the disease has probably passed beyond the lymphatics and a permanent cure can scarcely be hoped for, although operation is still indicated. It must not be supposed, however, that even this detail of operative procedure is universally accepted; one of the most competent and skilful of modern surgeons, Mr. Frederick Treves (*Manual of Operative Surgery*), advises against removal of the axillary lymphatics if the finger passed into the axilla through the upper end of the incision fails to detect enlarged glands, provided that the tissues right up to the fatty base of the axilla have been very liberally removed. The reasons for dissenting from this opinion have been given.

NEOPLASMS OF THE TONGUE.

Portions of the tongue have been removed in six cases. Of these operations, four were for carcinoma, one for a cyst, and the fifth for sarcoma. To give free access to the field of operation the cheek has been divided from the angle of the mouth backward to the masseter muscle on the side corresponding to the lesion on the tongue. Preliminary ligation of the linguals has not been found necessary. In two cases, however, a preliminary tracheotomy was done. The vessels were caught as the tongue was divided, after the manner of Whitehead. In no case was any difficulty experienced in tying the lingual arteries. Oozing from smaller vessels sometimes proved difficult to stop. The growth was removed together with a wide margin of healthy tissue, and when this was practicable the wound in the tongue was united with silk sutures. Where there was any doubt about the absolute extirpation of all diseased tissue, and in those cases in which it was not possible to sew the wound, chloride of zinc solution, thirty grains to the fluidounce, was brushed over the exposed surface. The zinc chloride is a powerful antiseptic, and in addition produces a slight superficial eschar, which, besides destroying any diseased tissue that may have been left, tends to prevent absorption of microbes or ptomaines during the first twenty-four or forty-eight hours preceding the development of granulation tissue.

The incision of the cheek was approximated by hare-lip pins. Special care was taken in the after-treatment of these cases, and the use of sprays and antiseptic mouth-washes every half-hour or hour was especially insisted upon. Sprays of peroxide of hydrogen followed by washing with phenol sodique in water 1:6, gave the best results.

In the case of sarcoma the same precautions were taken as in those of carcinoma. The wound healed promptly. It has been necessary at

three different times subsequently to remove recurrent sarcomatous growths from the neck.

In the case of the cyst it was possible to enucleate the sac so that very little healthy tissue was disturbed. Healing was rapid in all of the cases. In three of the carcinomatous cases there has been no recurrence up to this time, fifteen months after operation; in the fourth there was apparent freedom for a few months, and then a rapid and extensive return, which fortunately soon resulted fatally.

TUMORS OF THE JAW.

Three cases of osteo-sarcoma of the inferior maxilla, two of the superior maxilla, an osteoma involving both superior maxillæ (Fig. 14), and a fibro-myxoma involving the lower jaw, were treated by excision. All of these patients recovered promptly and without complications. In

FIG. 14.

Osteoma of both superior maxillæ.

the case of bilateral osteoma, both upper maxillæ were removed at the same time, the patient was not severely shocked, and recovered as rapidly as the cases of single excision, though the ultimate cosmetic result was not satisfactory. The operation, however, was undertaken for the relief of agonizing pressure-pain, and from this standpoint was entirely successful.

After excision of the superior maxilla the cavity was packed with iodoform gauze for twenty-four hours, and thereafter was sprayed with peroxide of hydrogen, and then washed with phenol sodique in water 1 : 6, hourly during the day, and kept packed with iodoform gauze during the night. In excision of the lower jaw, the mouth cavity was shut off by suture of the mucous membrane. As an added precaution, antiseptic mouth-washes were regularly employed at short intervals.

Myxoma of the inferior maxilla; excision.—H. A., aged seventeen years, was sent to the hospital by Dr. Dechert, on account of a tumor of four years' standing, involving the lower jaw. The only antecedent history that seemed to have any bearing upon the trouble was the fact that the temporary teeth

were lost early, and the permanent teeth were late in appearing, although this may have been a mere coincidence. Examination showed that the left inferior maxilla was more than three times its normal size. The overlying soft parts were healthy. A free incision was made on the under surface of the tumor, parallel with the jaw, dividing all the structures down to the bone. The periosteum was elevated. The bone was disarticulated on the left side, and sawn through at the position of the canine tooth on the right side. The wound was drained and dressed antiseptically, antiseptic mouth-washes being employed at frequent intervals. The patient made a rapid recovery, with very slight loss of motion or of facial expression. His health is good at this writing, now a year after the operation. There has been no appearance of subsequent involvement of the remaining portion of the bone. Microscopic examination of the tumor showed the growth to be a fibro-myxoma. The bone had become a mere shell, covering this mucoid substance.

EMPYEMA OF THE ANTRUM.

Two cases of empyema of the antrum were opened and drained. One presented typical symptoms, *i. e.*, œdema of the overlying soft parts, and a purulent discharge from the nose when the patient lay down and turned on the sound side. The other case gave no history of discharge, there was no œdema, and the symptoms simulated almost exactly those of a solid growth. Indeed, such a diagnosis had been made by surgeons, and the operation of excision had been advised. In one of these cases, the canine tooth being sound, the cheek was turned up and the antrum was entered through the canine fossa; in the other, the canine tooth was pulled, and a small gouge was pushed up through the alveolus. Both recovered completely, though in the latter instance there was extensive necrosis, a large portion of the superior maxilla being removed through the mouth, and without opening the cheek.

SARCOMA OF PAROTID REGION.

E. J., male, aged forty-nine years; two years ago first noticed a small excrescence below the right ear; this was removed by a silk ligature. Two months later a swelling began in the region of the parotid gland, which grew slowly at first and then more rapidly, and became painful. On incision, it was found that the parotid gland was filled with altered blood-clot, and that there was a hemorrhagic infiltration of the surrounding tissues. The disease seemed to have begun in the glandular or other structures superficial to the parotid, which though disorganized by ulceration of its capsule and pressure of extravasated blood, did not appear to be infiltrated with the sarcomatous elements. A small portion of the posterior part of the gland was, therefore, allowed to remain, and ligation of the parotid and section of the facial nerves were thus avoided. Good union, no facial paralysis. The absence of return at this writing, one year after operation, would seem to justify this procedure.

CARCINOMA OF PAROTID.

Female, aged seventy-two years, came to the hospital on account of a tumor of stony hardness in the parotid region. The swelling seemed limited mostly to the gland, except at its upper portion where the skin was adherent and ulcerated. The entire parotid gland was extirpated, together with the affected skin, extending up as far as the temporal region. It was necessary

to tie the external carotid artery, and the facial nerve was also necessarily sacrificed. The upper part of the sterno-mastoid was infiltrated. This was removed by an incision through the healthy muscle. The patient made an uninterrupted convalescence, and has remained well for eight months.

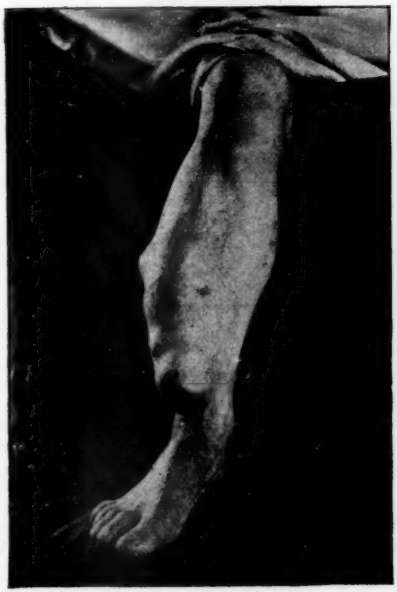
LIPOMATA.

Eleven lipomata were excised. They were generally single, encapsulated, of moderate size, and presented the pathognomonic symptom, *i. e.*, dimpling on pinching up the overlying skin. In one case the growths were multiple; in one the tumor was not encapsulated; in one it exhibited a migratory tendency, travelling from the superior carotid triangle to the sternal notch. All these cases healed promptly, generally under one dressing.

In the following instance the diagnosis was exceedingly obscure, and was only made after incision:

Lipoma of leg.—E. M., male, aged sixty-two years, came for advice on account of a swelling involving the antero-external aspect of the right leg.

FIG. 15.



Fibro-lipoma of leg situated beneath the deep fascia.

He stated that in 1887 he had an acute painful swelling under the right patella. This disappeared under treatment. In 1880 the present growth

made its appearance as a uniform swelling over the antero-external border of the tibia. It was soft at first, but gradually became hard. The tumor extended downward until it reached the front of the ankle, and it took on a nodular character (Fig. 15). The patient did not complain of pain. The skin was not involved. The chief interest of this case is in regard to the diagnosis. The peculiar appearance of the tumor, considered in conjunction with the age of the patient and the seat and history of the growth, seemed to make impossible a positive diagnosis between malignant neoplasm, tenosynovitis of unusual proportions, and lipoma. The growth was found to be a fibro-lipoma lying beneath the deep fascia, sending prolongations along the inter-muscular spaces and adherent at points to the inter-osseous membrane. An extensive dissection was required for its removal. The patient made a perfect recovery. The tumor weighed over two pounds.

SARCOMA AT BASE OF NECK.

J. B., male, aged nineteen years, came to the hospital on account of a large tumor at the base of the neck on the left side. Over a year before presenting himself here he noticed a small lump in the supra-clavicular fossa,

FIG. 16.

Sarcoma of the base of the neck.

at that time movable. It did not seem to grow much for a time, but became irritated by the pressure of the baskets which the patient's occupation obliged him to carry on his shoulder. In two months' time the growth had increased from the size of a pigeon's egg to that of a goose-egg, and from this time growth was very rapid. The measurements of the tumor were as follows: The smallest circumference of its base, nineteen inches; greatest longitudinal measurements from base to base, fourteen inches; greatest diameter, six and one-half inches. There was marked discoloration of the skin, through which greatly distended veins were seen ramifying; the skin was ulcerated on account of the irritating applications made by a "cancer doctor," and there was marked local increase of temperature (Fig. 16). The tumor was excised, and, on microscopic examination, proved to be a spindle-celled sarcoma. It weighed more than four pounds. The patient made a rapid recovery.

SARCOMA OF THE FOOT.

A. S., male, aged forty-five years, first noticed a small, dense lump on the sole of the right foot, between the first and second metatarsal bones, five years ago. But little inconvenience was caused by the growth, which

FIG. 17.

Sarcoma of the foot.

FIG. 18.

Sarcoma of the foot laid open, showing the central original portion which remained encapsulated for years.

did not appreciably increase in size for about three years. At the end of this time a swelling was noticed on the top of the foot, corresponding with the seat of tumor on the plantar surface. From this time growth was rapid and continuous, reaching the size shown in the cut (see Fig. 17) in less than two years. There was no severe pain at any time—only a sense of discomfort from pressure. On presenting himself for examination, the skin covering the tumor was found not involved; there was no redness or other sign of inflammation; the superficial veins were unduly prominent. The growth was believed to be either a sarcoma or an enchondroma, with the probabilities in favor of the former. The patient was advised to submit to exploration of the tumor, and if it was found malignant to have the foot amputated. This was accepted, and, after anæsthesia, a free incision through the enlargement revealed an unmistakable sarcoma, which it was impossible to enucleate, and amputation was accordingly performed through the lower third of the leg. The patient made a rapid recovery without complication.

Examination of the growth revealed a small, firm, encapsulated tumor, about the size of a shellbark, between the first and second metatarsal bones, which had been the growth first noticed by the patient. The large mass had apparently sprung from a rupture of the capsule of this, so that before the capsule broke the disease remained localized (Fig. 18). The beginning of the rapid growth marked the time of this rupture.

Examination of microscopic sections confirmed the clinical diagnosis.

The case is one of many that emphasize the importance of early operation in new-growths. For years this growth was probably removable without sacrifice of the foot, and certainly with much less risk of generalization than at the time when he finally submitted to operation.

VESICAL CALCULUS.

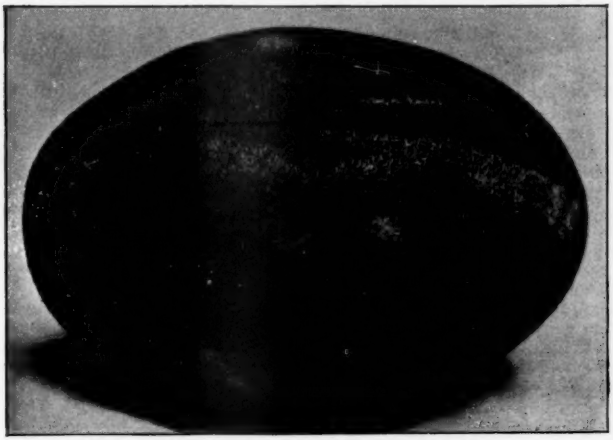
Twenty operations have recently been performed for vesical calculus. Litholapaxy offers so many advantages over other methods that in all suitable cases this procedure has been adopted. A very marked advantage is the rapid convalescence after litholapaxy. The patient is able to leave the bed on the fourth or fifth day, and to leave his room at the end of a week. The operation itself, if properly performed, is almost free from danger, and the mortality in healthy subjects very low. The operation is applicable to a wider range of cases than was formerly supposed. It has been found, for example, that litholapaxy has the same arguments in its favor in children that it has in adults, and that with instruments of the proper size no more difficulty is experienced. One patient, a boy of seven years, presented the usual symptoms of vesical calculus. A stone, about a quarter of an inch in diameter, was found, and was crushed and washed out. The patient was dismissed on the fourth day entirely well. The other cases of this operation were in adults whose ages ranged between twenty-three and sixty-two years. They all made a satisfactory convalescence. In three cases, on account of either a very high degree of cystitis, or the presence of strictures, or both, supra-pubic lithotomy was performed.

In another case, previously reported,[1] but mentioned now for the sake of its unusual clinical interest, the lithotrite failed to grasp the stone.

[1] Annals of Surgery, January, 1890.

The high operation was resorted to. The stone was so large that the lithotrite blades could not be separated sufficiently to seize it, though the instrument had a range of more than two inches. It was nearly encap-

FIG. 19.



Uric acid calculus, successfully removed after symptoms of stone had persisted for twenty-six years. Exact size and shape.

sulated, and was tightly adherent to the surrounding mucous membrane. The calculus weighed about nine and a half ounces. The patient made a complete convalescence with entire relief of his symptoms, which were of more than twenty-five years' duration. The exact size and shape of this stone are shown in Fig. 19, and are contrasted with those of the foreign body shown in Fig. 20, which Dr. White recently removed from the bladder, for the sake of emphasizing the importance of infection, or of its absence, in the production of vesical symptoms. In the former case the symptoms of stone dated back twenty-six years, but in all that time there had been little or no serious disturbance; the patient worked at his trade of shoemaker; his urine, while it contained a few pus cells, was otherwise sterile, and his kidneys remained sound. In the second case a high grade of cystitis was set up by the presence of a soft waxy taper introduced by the patient himself but a few days before; the urine was loaded with pus, fetid and poisonous, and a septic fever was present from the beginning. The size and

FIG. 20.

Wax taper removed from bladder.

even the shape of a foreign body in the bladder are altogether secondary, as regards the production of subjective symptoms, to the presence or absence of the pyogenic, and especially the saprophytic microbes.

The fatal results were all due to extensive renal disease, and were as follows:

J. R., aged seventy years, had suffered for many years from vesical irritability. He was extremely wasted and anæmic, and was so harassed night and day by bladder tenesmus that immediate relief was imperatively demanded. His constant suffering rendering futile all efforts directed toward improving his general condition, supra-pubic lithotomy was performed, and the stone rapidly extracted. Although but an unusually small amount of ether was given, the secretion of urine was arrested, and the patient died in three days from uræmia. The kidneys were the subjects of advanced pyonephrosis.

E. G., aged sixty-five years, was found to have a stone in the bladder, a considerable degree of cystitis, and a number of strictures. On account of the latter litholapaxy was impossible for the relief of the stone, and it was decided to perform supra-pubic lithotomy. The patient presented all the evidences of advanced senile degeneration, arcus senilis was marked, the arteries extremely atheromatous, and the patient well-nigh exhausted by the pain and frequent micturition from which he had suffered. Chloroform was administered on account of suspected kidney degeneration, and the stone removed by the high operation. The patient did well for two days, when he became delirious, and died from uræmia. At the autopsy atheroma of the vessels was very noticeable. Seven hemorrhagic infarcts of the lower lobe of the left lung were seen; the spleen was enlarged and indurated. The right ureter presented an impermeable stricture about four inches from the bladder, and the corresponding kidney was hydronephrotic. The left kidney was enlarged, the seat of calcareous deposit, with numerous cysts, and was in a condition of beginning hydronephrosis.

Supra-pubic lithotomy and prostatectomy.—J. S., aged sixty-six years. Urinary symptoms began sixteen years previously; the catheter had been required at intervals for eight years, and constantly for four years. He had lost flesh rapidly, was sallow, had chronic bronchial cough; in twenty-four hours twenty ounces of urine were passed, containing large quantities of pus, hyaline and granular casts, and vesical débris; a medium-sized stone was detected in the bladder, and an enormously large prostate was discovered. There was a mitral murmur with evidence of beginning consolidation of the right apex. The patient's sufferings were so great that operation was decided upon in spite of the unfavorable outlook. A supra-pubic operation seemed indicated in this case. The calculus crumbled under the forceps and was removed with the finger and scoop; the mucous membrane covering the prostate was snipped at different points and projecting portions of the prostate were enucleated with the finger. The amount removed weighed three ounces. The patient did well until the middle of the fourth day, when he developed maniacal delirium, refused food, and had to be kept in bed by force. He gradually passed into a condition of coma and died seven and a half days after operation. At the autopsy the wound seemed to be doing well. The ureters were distended to nearly the size of the wrist, and the kidneys were almost completely disorganized and contained multiple purulent foci.

Cystitis.—Many patients were treated for chronic cystitis. The first point observed in this service in the treatment of such cases is the overcoming of mechanical interference with complete evacuation of the bladder, by mechanical treatment, operation, or the use of the catheter, in accordance with the nature of the case.

Tenesmus is treated by local applications to the prostato-vesical region and in some cases by overstretchings of the deep urethra and vesical neck. Of the local applications, instillations of silver nitrate, ten drops at a time repeated every second day, are found most serviceable. One per cent. solution is first used, the strength being gradually increased up to 10 per cent. Guyon's instillations of bichloride of mercury 1 : 10,000, ten to twenty drops at a time, are successful in many instances.

The urine is rendered sterile, or at least this is attempted, by giving salol and boric acid by the mouth, putting the patient on milk diet, and irrigating the bladder with warm antiseptic lotions. Of these, the most valuable are nitrate of silver, 1 : 1000, boric acid saturated solution, peroxide of hydrogen 1 : 6 to full strength.

Prolonged hot baths, counter-irritation, and the judicious use of salines are all useful adjuvants. Marked improvement invariably took place, and the recent cases were almost always cured.

OPERATIONS ON BONES.

For Necrosis.—The rule in this operation has been to make an incision so free that the diseased bone can be both seen and felt; chisels, gouges, curettes, and trephines are employed to attain the end of thorough removal of all diseased bone. In any extensive operation the Esmarch tube is employed, but the limb is rendered bloodless by elevation for five minutes rather than by the use of the elastic bandage. This is thought to diminish or do away with the vasomotor paralysis which sometimes follows the use of the tube, and favors consecutive oozing. The after-treatment consists in filling the cavity with sterile iodoform gauze and covering the wound with a firm antiseptic dressing. Ninety per cent. of these cases were of tubercular origin, and in these general measures were adopted in addition to operative interference.

Foot and ankle. Three cases in which the disease affected the astragalus and lower extremity of the tibia were operated upon. These all recovered, and, although the range of motion in the ankle was impaired, the joint was a useful one.

Femur. Eleven cases in which the disease affected the femur have been operated upon. Among the exciting causes were gunshot wounds, blows, and falls upon the part, unusual muscular exertion, etc.; four of the cases were post-typhoidal. All were subjected to the usual operation and all recovered with perfect use of the limb. In one case, giving a tubercular family history, there was central necrosis of the entire shaft of the femur. The operation was prolonged, difficult, and attended with much bleeding. The patient was profoundly shocked, and did not react thoroughly until the third day. From that time his convalescence was slow but uninterrupted. He recovered entirely with a functionally perfect limb.

Tibia. Seven cases of necrosis of the tibia have been treated. In two of these there was almost total central necrosis of the shaft. In operating, the periosteum was spared, the entire canal of the bone opened, and a sequestrum representing a cast of the interior of the bone was removed, together with a

large portion of the irregular involucrum. Healing was slow, a few sinuses persisting for many weeks. The patients were, however, able to walk on the limb. One case, seen early, presented a small node on the anterior face of the tibia, which had been the seat of severe pain for four weeks. The bone was trephined at this point and a focus of softening (tubercular) not larger than a pea was discovered. This was well curetted, and treated as the other cases, with perfect relief of symptoms. In another case, a lad aged fifteen years, a blow received just above the tubercle of the tibia, five years previously, had been followed by osteo-periostitis and some superficial caries. The wound had healed solidly soon after, and the cicatrix remained firm. There was some thickening and hardening of the upper end of tibia. The boy had persistent gnawing, boring pain, worse at night, and rendering his life miserable. This led to the diagnosis of pyogenic osteitis, as the head of the tibia is one of its favorite seats, and it occurs by preference in adolescents and not infrequently years after an injury. An opening was made with gouge and chisel, but no pus was found until it had been carried through the thickened bone to a depth of two and a half inches, where a collection of not more than half a drachm of pus was evacuated. The operation was followed by instant relief.

All of the patients recovered with useful limbs.

Humerus. Three cases have been operated upon for necrosis affecting the humerus; one was a case of central necrosis involving the upper half of the shaft of the bone. A sequestrum five inches long was removed, leaving a shell of involucrum so thin that splints were applied to prevent spontaneous fracture. This patient recovered with a strong arm.

Maxillæ. Five cases of necrosis of the lower jaw, and two of the upper jaw, were all due to infection with the organisms of suppuration through the cavities of carious teeth. All made a satisfactory recovery.

Patella. One case of necrosis of the patella presented himself for treatment. He suffered from suppurating sinuses of long standing, affecting the front of the knee, and following a slugshot wound. The patella was found to be necrosed, and a number of loose fragments were removed. Healing followed, with no diminution of function or usefulness.

Skull. One case of extensive syphilitic necrosis of the skull was operated upon. Several sinuses led to a number of large fragments of loose bone, constituting perhaps one-third of the frontal and parietal bones. These were removed, and mixed treatment administered. Complete healing followed. The initial lesion was contracted fifteen years before.

FRACTURES.

In the following series of fractures no case of non-union has occurred, and in every instance the patient has recovered without appreciable deformity and with perfect restoration of function, with the exception of the intra-capsular fractures of the femur and a vertebral fracture. The seat of fracture and the dressings were as follows:

Acromion process. Two cases. Velpeau bandage.

Carpus (scaphoid). Anterior and posterior splints.

Clavicle. Four cases. One of these was bilateral. A Velpeau bandage was applied to the three cases of single fracture. In the bilateral fracture no dressing was applied; the patient was kept in the recumbent position, on a hard mattress with a flat pillow, and with sandbags on either side of the head. At the end of two weeks and five days the bones were firmly united and in good position.

Femur. Eleven cases. Three of these were intra-capsular.

Extension was made by means of a stirrup, to which was attached a cord passing through a pulley placed at the foot of the bed, and bearing a weight

at the other extremity. The adhesive straps forming the stirrup were carried up as far as the upper end of the lower fragment; a roller bandage was then applied to the limb. Lateral support was obtained by means of sandbags. The amount of weight employed depends upon the degree of shortening. It is thought best to begin with moderate weight, and to measure the limb from day to day, adding gradually to the extension until the shortening is overcome. In no case was the shortening after cure greater than an inch and a half.

Fibula. Four cases. The limb was fixed in a fracture-box.

Humerus. Seven cases. One of these was a compound fracture, involving the elbow joint and requiring excision.

A drainage-tube was introduced, the wound stitched with silkworm-gut, dressed antiseptically, and placed on an anterior right-angled splint. The patient recovered with a useful limb. In two cases the internal condyle was involved. In these instances anterior obtuse-angled splints were applied. Another case presented a fracture of the internal condyle and dislocation of the elbow. The limb was dressed on an anterior obtuse-angled splint; recovery followed without loss of motion. The other cases were dressed on internal right-angled splints.

Maxilla (inferior). Two cases. Pasteboard trough, held in place by a Barton bandage.

Maxilla (superior). Two cases. In one of these the squamous portion of the temporal bone was also fractured. There was no displacement, consequently no dressing was required.

Patella. Five cases. In three of these Agnew's splint was applied. In one, both bones of the leg and the sacrum were also fractured. The leg was placed in a fracture-box. The sacrum did not need any appliance to maintain the proper positions of the fragments. All made a satisfactory recovery without any impairment of function. The two other cases were subjected to operation, one after Barker's method, and the other after Stimson's. (See January No. of THE JOURNAL.)

Radius (Colles'). Six cases. In two instances anterior and posterior straight splints were applied, in addition to pads, over the projecting fragments; in the remaining four cases Bond's splint was applied. Equally satisfactory results were obtained by both dressings.

Radius and ulna. Four cases. Anterior and posterior straight splints, the hand being in the semi-prone position.

Ribs. Seven cases. The affected half of the chest was immobilized by strips of adhesive plaster.

Skull. Nine cases. Two were simple, six were compound, and in one the fracture was at the base. All were trephined except the latter case. Two died; one of these was the fracture at the base, the other was a compound fracture, with extensive laceration of the brain substance. The other seven cases made a satisfactory recovery.

Tibia. Three cases. The limb was fixed in a fracture-box.

Tibia and fibula. Twelve cases. Four were simple, five were compound, and three were compound and comminuted.

The method used in compound fractures of the leg is that employed by Mr. Frederick Treves at the London Hospital. The limb and wound are washed and irrigated on admission; the fracture is set and the limb immobilized. If oozing continues, as it generally does in these cases, the nurse is instructed to dust iodoform over the wound at short intervals, until finally a clot of blood, impregnated with the iodoform powder, forms an aseptic scab, under which, as a rule, healing takes place as in simple fractures. The fracture-box and bichloride towels which envelop the limb are so arranged that the wound can be exposed with no disturbance to the fracture. A long series of cases under Mr. Treves' care at the London Hospital, and under Dr. White's, at the University and German Hospitals, justify confidence in this method.

Vertebra (dorsal). One case. The patient is paraplegic.

LUXATIONS.

Six luxations of the shoulder and one of the elbow were reduced under ether. With two exceptions these were recent cases, and reduction was accomplished without difficulty. One old case was of nine weeks' standing. The patient, a large, powerful man, aged thirty-six, presented the typical deformity and disability of a subcoracoid luxation. He was etherized, and Kocher's method was given a thorough trial, but without satisfactory results. Manipulation and traction in all its forms, both with and without leverage, failed to effect reduction; finally, after over two and a half hours' effort, the bone slipped into place during forcible outward traction, aided by direct pressure on the head of the bone. The patient recovered with a functionally perfect arm.

The second case was very similar in the situation of the bone, etc., but was even more unpromising, as the luxation had remained unreduced for thirteen weeks, and the adhesions were exceedingly dense. They were, however, broken up one after another by the methods described above, and the head of the humerus was finally placed in what was left of the glenoid cavity, and with an excellent range of motion.

EPITHELIOMATA.

Forty-five patients have presented themselves on account of epitheliomata about the face. The majority of these involved the lips. In such cases, if the disease had not advanced too far, a V-shaped incision was made around the lesion and the wound brought together with hare-lip pins. In other instances, where the lesions were of large dimensions, plastic operations were performed to fill in the gap left after removal of the neoplasm.

The invariable rule is to remove every portion of infected tissue, and from one-quarter to one-half inch of sound tissue beyond it. In one case, a man aged fifty-five years, the disease had existed for more than five years, during which time numerous "plasters" had been employed. The lower lip, the soft parts of the chin, and of the cheek back to the masseter muscle, had been destroyed. The alveolar border of the lower jaw was gone. For the relief of this condition the middle portion of the inferior maxilla was removed, and the lip and chin formed from skin taken from the neck and cheek. The wound healed satisfactorily and the patient left the hospital temporarily free from disease.

In another case, a man aged fifty-two years, whose upper lip had been entirely destroyed, the lip was restored by flaps taken from the cheeks. The immediate result of this operation was very gratifying, but the trouble returned some months afterward.

OPERATIONS ON NERVES.

Nerve-suture.—S. M., male, aged twenty-four years, six months before entering the hospital fell upon broken glass and sustained a wound of the left wrist. It was shortly observed that the thumb and first three fingers were paralyzed and anæsthetic. There was gradual return of motion and sensation in the ring finger, and to a much less extent in the middle finger. The index finger remained absolutely paralyzed and analgesic, although there was slight sensation on deep pressure; its skin presented atrophic changes. The thumb could not be flexed, but the power of adduction remained. The inside of the thumb over the distal phalanx was analgesic; sensation had returned in the other portions. The ball of the thumb was

much wasted. Just above the scar in the wrist was to be felt a small, hard nodule, slight pressure on which caused a tingling sensation.

An incision was made along the course of the median nerve, including the scar of the wound. The bulbous proximal end of the nerve was readily found, although displaced somewhat toward the ulna. The distal end was only found after the dissection had been carried some distance under the anterior angular ligament. It was somewhat enlarged and was adherent to one of the superficial flexor tendons. It was dissected loose, and both ends were retrenched until the sections presented a healthy appearance. The nerve was then united by four fine catgut sutures threaded on ordinary sewing needles. These sutures were passed not only through the sheath, but through the substance of the nerve. The wound was dressed antiseptically and placed in a posterior splint that strongly flexed the hand, thus relieving the nerve of tension. The following day there was slight motion in the index finger and marked increase in sensation. Healing took place uninterruptedly, and there now seems (six weeks after operation) every prospect of entire recovery of function.

The propriety of uniting divided nerves is universally conceded. Even when from original neglect of this procedure secondary changes, such as atrophy of muscles, degeneration of nerve fibres, and ascending neuritis have taken place, operation holds out a fair prospect of ultimate success. Statistics (Bowlby) show that in over 43 per cent. the results have been entirely satisfactory, while there has been marked improvement in the great majority of cases. The case reported above shows what is constantly noted, *i. e.*, return of sensation before motion; but the very rapid return of sensation, as in this instance, is, for cases of secondary nature, comparatively rare.

Nerve stretching.—Three cases of sciatica were treated by nerve-stretching. All were inveterate cases, which resisted every form of conservative treatment. Two were entirely cured by operation, one experienced marked relief. This operation is so quickly performed, is usually so devoid of risk, and is in suitable cases attended with such good results, that it should be more frequently recommended. The nerve is exposed and hooked out of the wound in a few seconds; the wounds unite promptly, requiring no drainage. These patients were kept a week in bed, a week on chairs, and were then allowed to go about as they wished.

In one case the musculo-spiral was stretched for the relief of paralysis, apparently occasioned by a neuritis of long standing, which in turn was due to an imperfectly reduced fracture. Some improvement followed the operation, and the case is steadily improving under electricity and massage.

In three cases of obstinate neuralgia an inch of the inferior dental nerve was excised, this operation being performed through a trephine opening made in the inferior maxilla. All these patients experienced relief, lasting in one case upward of a year. In all it was probable that the pain was due to a peripheral neuritis starting in the branches distributed to a carious tooth, and continuing in the main

trunk after the teeth had received proper attention. If this theory is correct, and the nerve changes have not extended beyond the seat of excision, the operation may be expected to give permanent relief.

Nerve-grafting for musculo-spiral paralysis.—Mrs. W., aged thirty-four years, some months before coming under observation had had a neuroma removed from the musculo-spiral nerve by a surgeon in a neighboring city. Following the operation there was complete paralysis of the muscles supplied by this large trunk. The extensor muscles of the forearm were atrophied when she applied for advice, and there was absolute loss of power to extend the hand.

It was decided to make an effort to suture the ends of the nerve. Accordingly an incision was made along the cicatrix of the former operation. The two ends of the divided nerve were found, but were so separated that direct suture was impossible. To fill up the existing deficiency, a portion of the sciatic nerve of a dog was employed. After the ends of the musculo-spiral had been freshened the transplanted nerve was sutured, end to end, to the former, the whole being encased in a tube of decalcified chicken-bone three inches in length. The wound healed by primary union. The patient remained under observation six weeks. During this time, however, no improvement in the patient's condition was noted.

Hare-lip.—Ten hare-lip operations were performed, the flaps being so cut that the disfiguring notch often left after these operations was avoided. There were no complications; the pins were removed in seventy-two hours, tension on the wound being prevented by rubber adhesive strips, drawing the cheeks forward. In some of the cases iodoform collodion was applied as a dressing; this, however, is stiff, difficult to remove, and favors retention of discharge along the pin tracts. Iodoform gauze, held in place by rubber adhesive plaster, cut in the form of a double paddle, each blade of which was applied to one cheek, drawing it forward, was found to be the most satisfactory dressing.

Perforating appendicitis.—C. D., male, aged twenty-five years, was seized with sudden severe pain in the right iliac fossa, accompanied with vomiting, four days before admission to the hospital.

On admission the abdomen was so tympanitic that palpation failed to convey any positive idea of the nature of the trouble, but there seemed to be some increased resistance in the right iliac region. The respirations were shallow, hurried, and entirely thoracic; the pulse was thready and above 140 to the minute; the temperature 100°. Ether was administered, an incision was made in the right iliac region, and an abscess containing three ounces of pus mixed with feces was evacuated. The appendix was greatly thickened, and was perforated. It was removed and the stump was closed with a running catgut suture. As the general peritoneal cavity was infected, a median incision was made, and the cavity was flushed with warm sterilized boric acid solution. Both wounds were drained and closed antiseptically. The abscess cavity was irrigated every three hours with boric acid solution. The fecal odor disappeared and the patient apparently improved, but the following day symptoms of sepsis reappeared, the patient became dull, and later comatose, sinking rapidly, and died thirty-six hours after operation. An autopsy was not obtained, but it is probable that the septic condition was due to collection of pus shut off by adhesions.

Inguinal Hernia.—Five operations were performed for the radical cure of hernia. In all these cases the hernia could not be comfortably

retained by a truss. It is the rule in this service to attempt a radical cure only in those hernias which give some special indication for the operation. So many cases can be made comfortable by the application of a proper truss, and, on the other hand, there are so many relapses after the so-called "radical cure," even in good hands, that it is thought best to select for operation only those cases that are unable by reason of their occupation, or owing to some peculiarity of temperament, or to some exceptional condition of the hernia itself, to wear a rubber truss.

Macewen's operation was performed in the above cases with rigid attention to all the details. The results from this operation when it is properly performed, and particularly the results in the hands of its author, are more satisfactory than those claimed for any other operation except, perhaps, that of Bassini, which has as yet been performed by so few surgeons that its true value is still to be determined. All these patients made a prompt operative recovery, and with one exception passed from observation. They were kept in bed for from four to six weeks, and were then allowed to get up, wearing a properly fitted truss. During the two months they were in the hospital there was no relapse. In the following case there was relapse due to pronounced ascites:

F. G., aged fifty-four years, suffered for some years with ascites and a large scrotal tumor on the right side. The hernia could not be retained by a truss, and was rapidly increasing in size. Incision was made over the hernial sac, and when the latter was opened the hernia was found to be of the congenital variety, the ascitic fluid draining out freely. A case of omentum the size of a fist was tied off and the stump returned to the abdomen. Macewen's operation was performed. The patient made a rapid recovery, and remained well several months; but finally the hernia recurred, apparently on account of an enormous collection of fluid in the abdomen.

COCCYGODYNIA.

CASE I.—A. D., aged ten years, three years ago in climbing upon a chair slipped and fell astride of the back. After this accident he complained of persistent pain and tenderness over the coccyx, aggravated by sitting down. There were no local signs of inflammation, nor evidence of dislocation. The coccyx was removed, and entire relief of the pain followed.

CASE II.—D. L., male, suffered extreme pain in the region of the coccyx for a long time. The coccyx was excised. Wound healed rapidly. Patient discharged on the twelfth day free from pain.

CASE III.—L. M., aged thirty-five years, a typical neurasthenic, had been subjected to a large number of gynecological operations, but had escaped oöphorectomy. She complained of a constant pain in the coccyx, aggravated by sitting down. The pain was so severe as to interfere with her work. The coccyx was removed, the wound closed without drainage, and the patient discharged on the seventh day free from pain.

NEPHRORRHAPHY.

Mrs. D., white, aged thirty-two years, complained of constant dragging pain in the right lumbar region, which was made worse by jarring. Upon palpating the abdomen a tumor was found in the right lumbar region. It was rounded, smooth, and so movable that it could be made to occupy the umbilical, and even the left lumbar regions. Her urine was normal.

The kidney was reached through a lumbar incision, and stitched to the abdominal parietes by four silk sutures passed through the capsule and the cortical substance. The wound was packed with gauze and allowed to heal by granulation, in order more firmly to fix the organ by means of the cicatricial tissue resulting. After operation the urine was high-colored and contained a large amount of albumin, but no blood corpuscles were seen. The albumin gradually disappeared and the patient made a good recovery, gaining forty pounds in weight in three months, and was discharged free from her former symptoms.

DISEASES OF THE RECTUM.

Cancer. Dilatation.—P. C., aged fifty years, came to the hospital on account of pain in the rectum, associated with difficulty in the act of defecation. His passages were unformed, and pus was discharged from the bowel. On digital exploration, a cancer was detected extending far beyond the reach of the finger and densely infiltrating the surrounding structures in every direction. As it was evident that complete extirpation was impossible the stricture was dilated with bougies, and the patient was directed to return to the hospital for the operation of lumbar colotomy when obstruction became harassing.

Cancer. Colotomy.—L. B., aged fifty-two years, sought advice on account of obstruction of the bowel, dating from a violent strain eight months before. Defecation was painful, and there was an increasing discharge of blood and pus with the stools. One month before admission the patient suffered from a violent cystitis, and noticed at that time that gas and fecal matter passed *per urethram*. He was greatly wasted on account of the disease, and the accompanying pain was very severe. On examination, the rectum was found filled with a carcinomatous mass extending beyond the reach of the examining finger, and involving the bladder and peri-rectal tissues. For the relief of the obstruction left lumbar colotomy was performed. The colon was provided with a complete mesentery, which necessitated the opening of the peritoneal cavity. The parietal peritoneum and skin were first stitched together. The gut was then fixed to this opening by a continuous suture. Great relief was afforded, and the patient returned to his home. He died three months later from extension of the disease.

Stricture. Dilatation.—Mrs. M., contracted syphilis eight years ago. There was probably a rectal chancre. Three years afterward she was operated on for fissure. Later she suffered from pain in defecation and a purulent blood-stained discharge from the bowel. Examination disclosed a dense stricture two inches within the anus that would just admit the tip of the little finger. Gradual dilatation was practised until the bowel had regained its normal calibre.

Two other cases of simple stricture were subjected to the same treatment. Both were discharged well.

Stricture. Proctotomy.—Mr. M., brought by Dr. Ayars, had suffered for some years from a gradually increasing stricture of the rectum, which had become too slight to admit the tip of the finger, and had resulted in a fistulous communication with the urethra, through which gas and fecal matter were constantly discharged. No satisfactory history as to etiology was obtainable. Syphilis seemed to be excluded; there had been no dysenteric symptoms; nor was there any history of simple ulcer. The stricture lacked the characteristics of malignancy.

It was divided, together with the sphincter and all the soft tissue, back to the coccyx. The wound was first packed around a large catheter with iodoform gauze, and was subsequently kept open by the frequent introduction of rectal bougies. Great relief was at once afforded, and there seems a fair prospect of permanent cure.

Prolapse, with hemorrhoids. Ligation and cauterization.—J. H., aged forty-six years, had suffered from protrusion of the bowel for several months. On examining the patient, he was found to have hemorrhoids in addition to the

prolapse. The hemorrhoidal masses were ligated in the usual manner. The protruded mucous membrane was burned in the direction of the long axis of the bowel with strong nitric acid, leaving strips of healthy mucous membrane between. A piece of lint saturated with oil was then placed over the prolapse and the bowel was reduced. The nitric acid caused a superficial slough, followed by sufficient cicatricial contraction to prevent a recurrence of the trouble. The patient was dismissed cured.

Hemorrhoids.—Twenty cases of hemorrhoids presented themselves. The piles were usually of the columnar variety, being both internal and external. Ligation, the clamp and cautery, and excision, are the three operations now in favor for the cure of this condition. Eighteen of the cases in this service were treated by ligation, two were excised.

The objection to the clamp and cautery is that this method affords less security against hemorrhage. Excision sometimes implies the loss of much blood. It is a comparatively slow operation, and in many cases is needlessly severe. Ligation is bloodless, rapid, and efficient. The theoretical objections urged against it have been controverted by a very large clinical experience. Every case healed promptly and uneventfully. Complications, such as tetanus, pyæmia, peri-rectal suppuration, and hemorrhage were never observed.

Before operation the bowels are thoroughly opened by a laxative followed by an enema. Previous to the administration of ether the external hemorrhoids are encouraged to prolapse by seating the patient over a pail of hot water and directing him to strain. After anæsthetization the sphincters are overstretched. The transfixion method is always employed as giving additional security against slipping of the ligature. Before tightening the threads the muco-cutaneous border around the base of the pile is incised, the ligature being made to lie in the line of this incision. After ligation the piles are cut off, usually only enough tissue being left to prevent the knots from slipping. The raw surfaces are then touched with pure carbolic acid, dusted with iodoform, and, when possible, reduced within the sphincter. An opium suppository and an iodoform suppository are then introduced into the bowel, some strips of iodoform-gauze are loosely packed just within the anus, and absorbent cotton and a T-bandage complete the dressing.

Anal Fissure.—Nine cases of this affection, all presenting the characteristic symptom of severe pain *after* defecation, have recently been operated on as follows: The ulcer was first scarified; the sphincters were next overstretched by introducing the thumbs into the anus and slowly separating them until they were in contact with the tubera ischii, and, finally, the external sphincter was divided. One patient had suffered from the affection for five years, during this time subjecting himself to different methods of treatment without relief. All of the cases of this series were rapidly and completely cured. The average time in bed was three days; confinement to room or house, six and a half days. In-

veterate pruritus ani has been cured in three extremely troublesome cases by the same method, omitting the division of the sphincter.

Anal Fistula.—Twenty-four patients presented themselves for relief from this condition. All gave practically the history of a precedent abscess in the ischio-rectal region, which either opened spontaneously or was opened by the surgeon, leaving a fistula which continued to discharge. A tubercular family history was elicited in a far larger proportion—more than two-thirds of the cases—than could be accounted for by mere coincidence.

In all of the cases a purgative is given the night before operation, and an enema the following morning. The patient is *fully* anæsthetized, many of the reported ether deaths having occurred at the beginning of operations about the anus, complete insensibility not having been produced. The anus is stretched as in fissure, the internal opening when this is present is found, and the tract leading to it is laid freely open. Every part of the wound is searched for other sinuses, which, if found, are also laid open. The wound is then touched with caustic potash, or with a 60-grain solution of zinc chloride. A suppository of 5 grains of iodoform and 1 grain of opium is inserted. The wound is thoroughly packed with gauze (preferably iodoform gauze), a T-bandage applied, and the patient put to bed.

Upon the subsequent dressing of these patients depends the final result. The essential point in the packing is to carry the initial extremity of the strip gauze packing *into the rectum*, after which the wound cavity should be gently filled with the body of the strip, care being taken to keep the edges of all the sinuses apart, so that healing must take place from the bottom of the wound only. The patients all made complete recoveries.

The average time in the hospital was about two and a half weeks, but this average is lengthened by the presence in the series of some very bad and long neglected cases. In two cases operated on by Dr. White for the late Dr. Agnew, who was present at the operations, fistulæ were dissected out completely and the wound brought together by deep and superficial interrupted sutures. Both attempts were failures, from infection of the wounds, which were reopened and packed in the usual way. The operation is the ideal one for fistula and ought to be feasible, though the practical difficulties in the way of local antisepsis are very great.

STRICTURE OF THE URETHRA.

Eighty cases of urethral stricture were subjected to mechanical or operative treatment.

In all urethral and bladder cases the patients were prepared by the administration of salol, gr. v, and boric acid, gr. x, four times a day. When there was abundant discharge the urethra was flushed out with saturated boric acid solution. The same antiseptic precautions were observed as in an ordinary surgical operation.

In but two cases was instrumentation or operation followed by chills

or rise of temperature; in both of them the symptoms subsided in a few hours. There was no case of instrumental epididymitis or cystitis. In examining for stricture the standard adopted is as follows: A penis three inches in circumference should take a 26 or 28 French sound; for each added quarter of an inch in calibre a sound two sizes larger should be taken. This represents the normal calibre and not the extent to which the urethra can be stretched. In detecting stricture the bulbous bougie was used.

A larger scale is given by some authorities, but the sizes mentioned have been found in this service to be more nearly correct. Having determined the normal calibre of the urethra, a bougie-à-boule five or six sizes smaller is passed into the bladder and allowed to remain a moment or two until spasm subsides. The instrument is then carefully withdrawn. In every case the bulb will be momentarily arrested and then pass on with a jump immediately after leaving the bladder. The cause of this obstruction is the posterior layer of the triangular ligament. Should any subsequent arrest of the bougie occur, it is due to a pathological condition—a stricture. If the instrument passes the entire length of the canal anterior to the triangular ligament without arrest or evidence of a roughness of the mucous membrane (and without any point of especial sensitiveness having been noticed by the patient), a larger size is used until the full normal calibre is reached and the possibility of stricture is excluded. Of course, if the instrument first selected cannot be passed, smaller sizes are to be employed. In case the meatus will not admit the proper instrument, a meatotomy is done at once. If a stricture is detected, the shaft of the bougie-à-boule is grasped just at the meatus and the instrument withdrawn. By measuring the distance between the point at which the bougie is held, and the bulb, the exact location of the stricture may be determined.

Strictures within four and a half inches from the meatus that do not yield to dilatation, and this is frequently the case, are subjected to internal urethrotomy by means of one of the dilating urethrotomes. In case the instrument cannot be passed on account of the small size of the stricture, a filiform bougie is introduced and a Maisonneuve urethrotome passed over this as a guide. In this manner the calibre may be increased sufficiently to admit the dilating urethrotome. After the section has been made, a full-sized acorn bougie is passed in order to be sure that all contractions have been divided. Finally, a large soft catheter is passed into the bladder, and tied in place. About the fifth day, the use of steel sounds is begun and continued at increasing intervals until the patient is cured.

Strictures of the bulbo-membranous portion are in a great majority of cases amenable to gradual dilatation. Even in those cases in which the narrowing is very great, if a filiform can be passed, the outlook for

cure by this method is favorable. Strictures that do not admit of the passage of even a filiform must be subjected to perineal section at once. In those cases in which a deep stricture does not yield to dilatation, external perineal urethrotomy is performed.

In cases where rupture of the urethra had occurred and extravasation followed, immediate perineal section was performed. An instrument was passed down to the seat of stricture, the point of this was cut down upon, and the dissection continued along in the fibrous tract representing the urethra, until a healthy portion of the canal was reached. A soft catheter was then passed into the bladder and retained. Any brawny or infiltrated tissue was incised. In two of these patients the temperature at the time of operation was 96.8° F. Both recovered. Another case was brought to the hospital in a comatose condition, supposed to be suffering from typhoid fever. Examination revealed the fact that the scrotum and lower part of the abdomen were greatly swollen and discolored. Immediate perineal section was performed, and the infiltrated tissues were incised at several points. Gangrene was already well advanced. The patient died the same day from the profound toxæmia.

Seven patients suffering from urethro-perineal fistulæ were operated upon. The sinuses were followed up to the urethra, laid open, and the stricture divided. A catheter was kept in the bladder a few days, and the wounds packed with gauze. All of the cases were discharged cured. One case of traumatic deep urethral stricture, which would only admit a filiform, yielded to dilatation. Six other cases were subjected to external perineal urethrotomy. In all these operative cases the regular use of the steel sound was continued for some time afterward.

But two patients embraced in this list have died. One has already been referred to; the other was also profoundly septic when first seen; perineal section was performed, and an instrument passed into the bladder, but it was too late to be effectual. The autopsy showed a pouched and chronically inflamed bladder, advanced pyonephrosis, and a purulent infiltration of the cellular tissue lying between the posterior surface of the pubic bones and the bladder.

CASTRATION.

Castration was performed on four patients. Twice it was necessitated by carcinoma, once for ulcerating tubercular degeneration, once for sloughing gummatous degeneration.

One patient, a feeble old man of seventy-six years, died some days after operation. The wound was healing without suppuration, and though death was probably hastened by operation, it was in this case due to general debility.

The other patients recovered promptly. The shock which it is often stated is always attendant on such operations was not noted in these cases.

HYDROCELE.

Ether may be given for this operation, but this is not necessary, and few of the cases here reported were anæsthetized.

The radical cure of hydrocele has been performed in thirty cases. The procedure which is adopted is to withdraw the fluid by a moderate-sized trocar and canula, after which a quantity of pure tincture of iodine is injected. For each ounce of the fluid withdrawn a drachm of iodine is injected. In two cases there was reaccumulation of the fluid: one was cured by a subsequent tapping and injection; the other, an old case, with a greatly thickened and indurated tunica vaginalis, was incised, the vaginal tunic was curetted and sutured to the skin, and the cavity was packed with iodoform gauze. The cure was rapid and complete in this case.

Three of these cases of hydrocele have been bilateral. Both sides were operated on at the same time. There were three cases of encysted hydrocele of the cord, two in children and one in an adult. In the former, the treatment consisted in passing a seton through the sac, tying the ends together, and applying an antiseptic dressing. A few patients refused the radical operation, and these were simply tapped. The results from the iodine injections were, with the exception of the two cases mentioned, entirely satisfactory. The pain excited was temporary; the fever and local inflammatory reaction subsided in two days; the patients were able to leave the hospital in a week, and there are no relapses to record.

Epiplocele with hydrocele.—J. F., aged twenty-seven years. The following case was diagnosticated as hydrocele complicated by hernia. He had worn a truss for inguinal hernia at irregular intervals. The day before admission to the hospital, while without the truss, he suddenly felt a pain in the lower part of the inguinal region, and found a considerable swelling in the scrotum. The tumor on examination was found to be non-resonant, gave no impulse on coughing, and was translucent at the lower portion, where palpation also detected fluid. The transparent portion of the tumor was tapped, but little fluid followed. An incision was made over the swelling, and a cyst was found adherent to the cord. There was considerable œdema of the surrounding cellular tissues. On further dissection an omental hernia was found. The omentum was ligated, the stump was stitched within the internal ring, and the wound was drained with a few strands of silk and closed. Healing was prompt and satisfactory.

HYPOSPADIAS.

Four cases of hypospadias were successfully treated by Duplay's method, modified in one instance by dissecting additional flaps from just behind the corona, by which added security against leakage was obtained at this point.

The first step in this operation consists in freeing the penis and dividing the band which curves the organ downward. After healing from this operation the glans is tunnelled and a new urethra is formed. To accomplish this a soft catheter is passed through the tunnelled glans and along the normal course for the urethra. An incision is then made upon each side of the catheter, and flaps are dissected up from each incision in both directions, *i. e.*, toward and away from the catheter. The two inner flaps are then turned in over the catheter, bringing skin surfaces in; finally the two outer flaps are sutured together over the inner flaps, bringing the raw surfaces of the two sets of flaps together, and closing-in the defect left in the median line between the edges of the inner flaps, which are never broad enough completely to encircle the catheter. The final step of the operation consists in making the newly-formed urethra continuous with the opening through which the urine flows. This is accomplished by flaps cut in the same way.

In the cases treated several operations were required, but the ultimate result justified the time and patience these cases always require.

CIRCUMCISION.

This operation has been performed on twenty-seven patients, generally for the relief of phimosis; in some cases for the cure of inveterate herpes, of recurring warts, or for the removal of an indurated chancre. Union took place promptly, and there were no complications. The dressing consists of a strip of lint about a foot long and an inch and a half wide, wrung out of one part of phenol sodique to five of water, wrapped circularly around the line of incision. This dressing is kept wet with the same lotion. The stitches are removed on the fifth day.

VARICOCELE.

The radical operation for varicocele has been performed in seventeen cases. The histories of these cases are practically uniform. All suffered from pain in the testicle; in many the gland was markedly wasted; nearly all were sexual neurasthenics. The operative procedure uniformly adopted was as follows:

The pampiniform plexus of veins was carefully exposed by an inch and a half incision, after which two sterile silk ligatures were passed around the mass about one and a half inches apart, care being taken not to include the vas deferens, which may readily be recognized by the finger, and which is kept out of the operative field by an assistant. The ligatures were tied and the intervening portion of veins excised. One end of each ligature was cut off short and the remaining two ends were tied together, so that, in addition to occluding the veins, the cord was shortened and the testicle made less dependent, which materially

aids in preventing a recurrence. Two or three silkworm-gut sutures sufficiently closed the wound, which was not drained. Healing by primary union has taken place with but one exception, in which instance a sinus formed, which finally discharged a ligature and then healed permanently. The result has been satisfactory in every instance. In some instances a complete transformation was wrought in the patient's character, every vestige of neurasthenia disappearing.

VARICOSE VEINS OF THE LEG.

Two cases exhibiting unusually well marked varices of the long saphenous vein were treated by excision of the dilated vessel. In each case an incision, eighteen inches to two feet or more in length, was made; the veins were rapidly dissected out, were ligated above and below, and the portion between the ligatures removed. In one instance this was two and a half feet in length. Modern methods make this operation no more difficult than subcutaneous ligation. It is particularly indicated when the varicose condition extends above the knee, since here it is difficult to place an apparatus which will be comfortable and will make uniform support. Varicose veins of the leg more rarely require such a radical procedure, since here a rubber or elastic bandage will usually afford complete relief.

TENOTOMIES.

During the service a number of tenotomies for the relief of deformity incident to muscular contracture were performed. The contractures were treated in some cases by massage and Swedish movements, with the application of appropriate braces or splints. In a number of appropriate cases tenotomy was performed. In talipes equinus and equinovarus, comprising the greater number of operative cases, the tendons were divided, frequently the plantar fascia also. The foot was forcibly carried to a little beyond the correct position, and was maintained in place by the application of a plaster-of-Paris bandage. On the seventh or tenth day this bandage was removed and the patient was given a club-foot shoe and was instructed to walk.

After tenotomy of the hamstring tendons, a straight posterior splint was applied. In one case of tenotomy and extensive myotomy for the relief of contracture at the hip-joint there was considerable subcutaneous extravasation of blood. This was quickly absorbed, and the functional result was satisfactory. All of these cases ran the customary afebrile aseptic course.

WOUNDS.

A large number of wounds were successfully treated in accordance with modern methods. During the entire service there was not one

case of erysipelas, tetanus, or other form of septic infection. One case was brought into the hospital suffering from a knife wound on the anterior aspect of the left shoulder. Gangrene was already well advanced, extending downward along the inner aspect of the arm halfway to the elbow-joint. The patient was suffering from diabetes. He perished from exhaustion in three days.

One case, a pistol-shot wound on the course of the femoral artery, three inches below Poupart's ligament, bled into the tissues of the leg on the third day after admission to the ward. A free incision was made, a large quantity of clotted blood was turned out, and the femoral vein and artery were exposed; both had been wounded. The artery was secured above and below, and the vein wound was closed by means of hæmostats, which clamped the rent without occluding the lumen of the vessel. In forty-eight hours the clamps were removed; this was immediately followed by violent hemorrhage. The wound was opened and they were reapplied. Two days later there was another hemorrhage. The artery and vein were then tied above and below, and the wound was packed with iodoform gauze. Fourteen days later there was another hemorrhage, apparently arterial. The femoral artery was ligated above the profunda femoris, and the wound was packed. After this recovery was uneventful. Barring absence of pulsation in the tibials after the last ligation there was no sign of circulatory disturbance in the foot except during the first hemorrhage.

PLASTIC OPERATION FOR CICATRICIAL DEFORMITY OF HAND.

J. M., aged thirty-two years, presented himself at the hospital for the relief of a disabling deformity of the hand from a cicatricial contraction following a deep burn. The middle, ring, and little finger were flexed so strongly that they were in actual contact with the dense cicatrix, which occupied the whole of the inner two-thirds of the palm. The first phalanx of the index finger was also flexed to almost a right angle. The three fingers principally involved were entirely useless. The whole of the cicatrix was dissected out, exposing the sheaths of the flexor tendons. A large flap of skin and subcutaneous tissue was then raised from the left breast, turned directly back on its base, its freshened surface was applied to the area from which the cicatrix had been dissected, and its margins sutured to the healthy skin surrounding the operative field of the hand. The hand was secured in this position by a modified Velpeau bandage for eight days. The pedicle of the breast-flap was then cut across, and the hand dressed on a posterior straight splint with the fingers extended. The transplanted flap retained its vitality throughout. At the time the pedicle was divided it bled freely. In the months following this operation there was some contraction, so that the three inner fingers were again partially flexed. The patient has, however, a useful hand, and exhibits what to one unacquainted with his history would be a rare anomaly—namely, a marked hairy growth in the palm.

AMPUTATIONS.

In formal operations flaps have been made as follows: For the forearm, antero-posterior musculo-cutaneous flaps made from without inward; for the arm, modified circular flaps; for the shoulder-joint, Larrey's method; for the leg, Sédillot's method, or modified circular skin flaps; for the thigh, antero-posterior, modified circular, musculo-cutaneous flaps, the upper one being cut from without inward, and the lower one from within outward. In several cases in which ampu-

tation was performed for injury it was impossible to secure the usual flaps on account of destruction of the integument. In these cases it was necessary to modify the plan, using what tissue was available. In two cases of amputation through the thigh the wound was closed without drainage; the others were drained.

The stitches were removed, as a rule, from the fifth to seventh day after operation. Healing was usually complete at the end of two weeks, the patient being discharged in the third week.

Twenty-six major amputations were performed, distributed as follows: Forearm, 2—one for tubercular arthritis and one for gunshot wound; shoulder-joint, 2—one for sarcoma and one for railroad crush; arm, 3—one for old ununited fracture and backward dislocation of elbow, and two on account of accidents; Chopart's, 1, Pirogoff's, 1—both for crush of the foot; leg, 5—one was a double amputation, four were performed for railroad crush, and one for sarcoma of the foot; thigh, 10—seven of the latter were for extensive tubercular disease of the knee-joint and contiguous structures; two of these were children two and three years old respectively. The other operations were performed for malignant tumor of the thigh (amputation just below the trochanter), for conical stump, and for epithelioma of the leg.

But one death occurred in this series. This was in the case of a man who received a crush of the leg. As the anterior and posterior tibial vessels were not injured, an attempt was made, after consultation with Dr. Agnew, to save the limb. Antiseptic irrigations were employed, in spite of which, however, the patient rapidly became septic, and amputation at this time failed to save him.

THE DIAGNOSTIC SIGNIFICANCE OF THE VENOUS AND ARTERIAL MURMURS IN THE NECK, BASED ON EXAMINATIONS OF FIFTEEN HUNDRED PERSONS.[1]

By James K. Crook, M.D.,
LECTURER ON CLINICAL MEDICINE AND PHYSICAL DIAGNOSIS AT THE NEW YORK POST-GRADUATE MEDICAL SCHOOL AND HOSPITAL.

The occurrence of certain auscultatory phenomena in the great vessels of the neck has been familiar to the profession since the days of Laennec, more than seventy years ago. Their presence has generally been attributed to those pathological changes in the blood constituting the condition known as anæmia, but their exact diagnostic relations

[1] Read before the New York Academy of Medicine, June 21, 1892.

have never seemed to reach any fixed or settled status in practical medicine. The following quotations from text-books and contributions to medical periodicals published within the last fifteen years will show the diversity of opinion regarding the clinical value of these sounds, referring more particularly to the venous hum:

A. Weil[1] expresses the opinion that "neither the presence of the venous hum in itself, nor its intensity, its rhythm, nor its persistence in various positions of the head or neck, stands in connection with any particular form of disease."

Immermann[2] writes as follows: "Two symptoms often met with in anæmic patients are worthy of special notice because of their importance in relation to diagnosis. They are supposed, not altogether unjustly, to furnish valuable evidence of the presence of anæmia. I refer to the so-called 'anæmic murmurs' over the region of the heart, and the *bruit de diable* heard in the veins of the neck."

Gerhardt[3] believes that "when the venous hum is not produced by some accidental influence, it is apt to be due to anæmia." He thinks those cases in which a thrill is appreciated by the finger are significant of anæmia and of diagnostic importance.

Guttmann[4] states "that the typical venous hum is found only in anæmia."

Fagge[5] makes the following statement: "It is important to notice that none of these murmurs (arterial and venous) are of the slightest significance from a clinical point of view, so far as the diagnosis of anæmia itself is concerned."

Flint[6] writes thus: "Of special significance in the diagnosis of anæmia is the presence of certain physical signs. . . . The arterial murmur is present in only a certain proportion of cases, but the venous hum may be heard almost invariably."

Eichhorst[7] does not attach much significauce to the venous hum, as shown by the following remark: "The *bruit de diable* is often heard over the bulb of the internal jugular vein (in anæmia), but this sound is also often heard in healthy individuals."

Strümpell[8] concludes as follows: "Murmurs in the large veins of the neck are very often heard in anæmia, either with or without cardiac murmurs. . . . We believe that the loud venous murmurs are more

[1] Auscultation of the Arteries and Veins. Leipzig, 1875.
[2] Art. "Anæmia," Ziemssen's Cyclopædia. New York, 1877.
[3] Lehrbuch der Auscultation und Percussion. Tübingen, 1884.
[4] Lehrbuch der klinischen Untersuchung-Methode. Berlin, 1886.
[5] The Principles and Practice of Medicine. London, 1886.
[6] The Principles and Practice of Medicine. Philadelphia, 1886.
[7] A Handbook of Practical Medicine, 1886.
[8] A Text-book of Medicine, 1887.

frequent in the anæmic than in other persons. We cannot claim, however, that they are of any great diagnostic value."

Apetz[1] claims that among six hundred and sixty patients examined by him in hospital wards, two hundred and eighty-four (forty-three per cent.) presented venous murmurs. Dividing his cases into three classes, anæmic, slightly anæmic, and non-anæmic, he claims to have discovered fifty-one per cent. of murmurs in anæmic persons, forty-six per cent. in slightly anæmic, and thirty-nine per cent. in those not at all anæmic. Apetz, therefore, concludes that "as this phenomenon is so often heard in persons who are not anæmic, it possesses very little diagnostic value, and should hardly be counted in favor of, or against, the presence of this affection."

Loomis[2] expresses himself thus: "The constant and important signs of anæmia are hæmic murmurs, which may be cardiac, arterial, or venous."

Dr. Bewley,[3] in a paper presented to the Royal College of Physicians of Ireland, March 6, 1891, arrives at the following conclusion: More than half the young persons who are *not* anæmic have a murmur in the neck. The presence of a hum, therefore, is of no diagnostic significance in any individual case."

Vierordt[4] says: This murmur (the venous hum) is sometimes heard in many healthy persons. . . . Strictly speaking, no diagnostic importance is to be attached to the phenomenon."

It will thus be seen that the testimony in reference to the meaning of these vascular sounds, as shown by the foregoing statements and opinions of recognized authorities, is very confusing, and in some instances absolutely contradictory. In view of this unsatisfactory state of contemporaneous evidence, the author determined, about a year since, to make a personal investigation of the subject, and ascertain, so far as examinations of a large number of persons would show, what relations these phenomena bear to diseased conditions, and what value to place upon them as a means of diagnosis. The investigation was begun early in June, 1891, and was terminated early in March, 1892. During that period fifteen hundred persons of various ages and conditions were examined. With reference to the diseases from which these persons were suffering, they may be classified as follows:

	Cases.
Bronchitis, with various complications of asthma, emphysema, influenza, malaria, etc.	611
Dyspepsia and intestinal disorders	177
Phthisis pulmonalis	122

[1] Virchow's Archiv, cvii.
[2] A Text-book of Practical Medicine, 1889.
[3] Lancet, vol. i., 1891.
[4] A Text-book of Clinical Diagnosis. Leipzig, 1891.

	Cases
Diseases of the heart, functional and organic	95
Anæmia and chlorosis	31
Muscular rheumatism, lumbago, etc.	41
Renal affections, acute and chronic	17
Articular rheumatism, acute and chronic	14
Various unclassified complaints, headache, nervousness, insomnia, pregnancy, pneumonia, etc.	349
Normal cases, persons presenting no appreciable pathological condition	43

Total, 1500.

The great preponderance of thoracic diseases is explained by the fact that a majority of the cases were seen at the Chest clinic of the Bellevue Hospital, Out-door Department, and at the clinic for General Medicine of the New York Post-Graduate Medical School and Hospital. It should be stated here that all of these patients were under my own treatment or observation. Many of them were kept under treatment for a long period of time, and not a few were examined by successive classes at the Post-Graduate School. The instrument employed in examining the neck was an ordinary flexible Cammann's binaural stethoscope. The patients were almost invariably examined in sitting or standing posture, with the head and neck in an easy and unconstrained position; a small number only being auscultated while recumbent.

The examinations of these fifteen hundred persons, as shown in the table on the opposite page, resulted in the discovery of fifty-one cases of well-marked and unmistakable hæmic bruits or murmurs originating in the bloodvessels, which equal 3.4 per cent. of the whole number.

These figures do not include those accidental murmurs induced by improper pressure of the stethoscope, or twisting of the neck unduly, nor do they include those cases of inspiratory breathing-sounds, which in some persons so nearly simulate the *bruit de diable*. In every case of doubt the patient was instructed to temporarily suspend respiration. A study of the statistics comprised in the table will reveal the following important, and, it seems to the author, conclusive facts: Of the fifty-one cases presenting hæmic bruits, we find that forty-three were females, in a total of six hundred and eighteen females examined—slightly under seven (6.95) per cent. There were eight males who presented bruits out of a total of eight hundred and eighty-two males examined—a little less than 1 per cent. This would indicate that these vascular phenomena are about seven times as common in females as in males. Analyzing the cases with reference to the age of greatest frequency, we obtain the results, by decennial periods, exhibited on the opposite page.

These numerical data indicate that these murmurs occur with far greater frequency during early adult life than at any other period of

TABLE OF CASES PRESENTING CERVICAL MURMURS.

No.	Sex.	Age.	Disease.	Vascular sounds.
1	M.	20	Dyspepsia, cardiac palpitation	Slight venous hum right side.
2	F.	18	Chlorosis	Distinct venous hum right side.
3	M.	22	Phthisis	Faint venous hum right side.
4	M.	28	Phthisis	Distinct hum right side.
5	F.	13	Chlorotic anæmia	Slight hum right side.
6	F.	28	Dyspepsia; quite anæmic	Loud hum right, and carotid murmur both sides.
7	F.	18	Chlorosis	Loud venous hum left side.
8	F.	24	Chlorosis	Loud venous hum right side.
9	F.	23	Mitral regurgitation; chlorosis	Loud hum over right external jugular vein, arterial murmurs both sides.
10	F.	16	Bronchitis; anæmic	Slight carotid murmur left side.
11	F.	27	Phthisis	Faint venous hum (side not noted).
12	F.	38	Metrorrhagia	Venous hum right side.
13	F.	40	Menorrhagia	Slight venous hum and arterial murmurs (location not noted).
14	F.	21	Peritonitis; very anæmic	Venous hum right, and arterial murmurs both sides.
15	M.	23	Normal; no disease	Rough carotid murmur right side.
16	M.	31	Phthisis; somewhat anæmic	Slight venous and arterial murmurs both sides.
17	M.	32	Ingrowing nail	Slight venous hum (location not noted).
18	F.	24	Peritonitis	Venous hum right side.
19	F.	24	Anæmia	Faint arterial murmur right side.
20	F.	17	Debility	Slight venous hum both sides.
21	F.	25	Phthisis; very anæmic	Venous hum and arterial murmurs right side.
22	F.	17	Phthisis	Slight venous hum both sides.
23	M.	48	Empyæma	Developed venous hum and arterial murmurs while under observation.
24	F.	27	Malarial fever	Venous hum right side.
25	F.	18	Chlorosis	Venous hum and arterial bruit right side.
26	F.	21	Chlorosis	Faint carotid murmurs (side not noted).
27	F.	17	Chlorosis	Faint venous hum right, carotid bruit left side.
28	F.	36	Probably aortic stenosis	Rough bruit over right carotid.
29	F.	14	Chlorosis	Carotid and venous (location not noted).
30	F.	20	Chlorosis	Venous hum right side.
31	F.	18	Chlorosis	Carotid and venous right, carotid left side.
32	F.	18	Exophthalmic goitre	Faint carotid bruit right side.
33	F.	30	Left subclavian aneurism	Bruit from aneurism.
34	F.	16	Chlorosis	Venous hum right and left sides.
35	F.	23	Chlorosis	Venous hum both sides.
36	F.	23	Phthisis	Faint arterial right side.
37	F.	25	Anæmia	Faint venous left, carotid right side.
38	F.	16	Chlorosis	Arterial murmur and venous hum right side.
39	M.	35	Nephritis; dyspepsia	Hum over right external jugular.
40	F	16	Chlorosis	Distinct right and faint left venous hum.
41	F.	15	Chlorosis	Loud arterial and venous right, faint left side.
42	F.	18	Chlorosis	Venous hum right side.
43	F.	16	Bronchitis; constipation	Slight right carotid bruit.
44	F.	21	Chlorosis	Venous hum (location not noted).
45	F.	16	Chlorosis	Venous hum both sides.
46	F.	22	Chlorosis	Venous and carotid bruits both sides.
47	F.	22	Chlorosis	Right and left venous bruits.
48	F.	18	Chlorosis	Slight venous and arterial murmurs both sides.
49	F.	18	Chlorosis	Venous hum both sides.
50	F.	16	Bronchitis	Slight venous hum right side.
51	F.	16	Bronchitis; anorexia	Faint venous hum right side.

Years.				Per Cent.
Under 10	26 persons examined,	no bruits		
From 10 to 20,	135 " "	22 "	(16.29)	
" 20 to 30,	476 " "	21 "	(4.41)	
" 30 to 40,	374 " "	6 "	(0.016)	
" 40 to 50,	239 " "	2 "	(0.008)	
" 50 to 60,	155 " "	no "		
" 60 to 70,	80 " "	" "		
" 70 to 80,	13 " "	" "		
" 80 to 90,	2 " "	" "		

existence. Taking the period from fifteen to twenty-five years inclusive, we find that 39 of the 51 cases of the vascular bruits occurred during this time (more than 76 per cent. of the entire number). The youngest person presenting a bruit was a girl, aged thirteen years, with chlorosis, and the oldest was a man, aged forty-eight years, suffering from empyæma. The average age of the 51 persons with cervical murmurs was a little over twenty-three years.

A most important point for analysis relates to the diseases of those persons in whom the vascular murmurs were discovered. A study of the subject resulted as follows: Of 31 well-marked cases of anæmia and chlorosis, we find 28, or more than 90 per cent., presented hæmic bruits. The next disease in order of frequency of vascular sounds is phthisis (in which affection we know anæmia to play an important part). Of 122 cases, we find that in 8 vascular murmurs were present. Among the remaining 1349 persons examined, we find only 15 in whom a true hæmic bruit could be elicited. Several of these are marked "anæmic" as complications of some other affection, and, while the author has no numerical data bearing on this point, a majority of them might properly have been indorsed in the same way. We notice, further in the table, that in almost all of the cases of vascular bruit marked "loud" or "distinct," anæmia or chlorosis is given as the disease condition present. Of 43 healthy persons examined, only 1 exhibited a vascular murmur; in this case there was a rough carotid murmur heard on the right side only.

A question of some interest relates to the points of origin and the location of these hæmic bruits. An analysis of the facts in the table bearing on this subject shows venous murmurs present in 42 cases, as follows:

	Cases.
On right side alone, in	21
On left " " "	2
On both sides, in	12
On side not noted, in	7

Venous murmurs present without arterial bruit in 26 cases. Arterial murmurs present in 25 cases:

	Cases.
On right side alone, in	9
On left " " "	3
On both sides, in	9
On side not noted, in	4

These data furnish some curious facts. They indicate that these cervical murmurs, both venous and arterial, are frequently present on one side of the neck alone, and far more frequently on the right than on the left side, the proportion being more than 10 : 1 for the venous and 3 : 1 for the arterial bruit. The figures show further that the *bruit de diable* is considerably more common than the arterial murmur, and, also, that

each variety is frequently present in the same individual without the other. These facts were first noted by the author while engaged in the study of chlorosis in 1886, and were contained in an article on that disease contributed to the *New York Medical Journal* of June 11, 1887. Until the present analytical investigation they seem to have received no subsequent verification. With reference to the location of the greatest audibility of these cervical sounds the author may be allowed to quote from this contribution: "After numerous clinical investigations I would locate the maxim intensity of this bruit—*i. e.*, the venous hum—in a plane rather external to the course of the great vessels of the neck. The space will correspond very nearly to a triangle having a base about two inches in length formed by the upper border of the inner third of the clavicle, the sides intersecting at a point about two inches above that bone." After six years' further experience with these murmurs, the author would now add that this area might be extended inward so far as to include the space underlying the sternal tendon of the sterno-cleido-mastoid muscle. In many cases the bruit can be heard only in the triangular depression (when this exists) between the two tendons of this muscle. In other cases it is best heard at the outer border of the supra-sternal notch. In some cases, when the hum is not at all appreciable over the internal jugular vein, it may be heard over the external jugular, near the outer edge of the above-described triangular area. When heard over the external jugular the murmurs may be caused to instantly disappear by firm pressure with the stethoscope and arresting the flow of blood in the vessel. The *bruit de diable* is not absolutely continuous, but may rather be described as intermittent, being loudest during inspiration. This has been ascribed to an intra-thoracic suction-force which hastens the return-current of blood through the jugular veins during inspiration. Referring to the location of greatest distinctness of the systolic arterial bruit, we may again quote from the article above referred to. We there find it stated that "this area is located at the summit of the thorax in front, and the root of the neck over the carotid arteries." The author would modify this statement only by noticing the fact that these hæmic systolic bruits of anæmia seem to be transmitted not infrequently up the carotid artery of one side only, and much oftener up the right than up the left side.

Conclusions.—The important deductions from the foregoing statistical study of these vascular phenomena may be briefly summarized as follows:

1. Hæmic bruits are rarely heard in healthy persons.

2. They are not often heard in persons not showing a considerable degree of anæmia.

3. They are heard in 90 per cent. of persons showing a well-marked degree of anæmia.

4. They are, therefore, of great significance in the diagnosis of this condition.

REVIEWS.

AN AMERICAN TEXT-BOOK OF SURGERY FOR PRACTITIONERS AND STUDENTS. Edited by WILLIAM W. KEEN, M.D., and J. WILLIAM WHITE, M.D. Pp. 1209. Philadelphia: W. B. Saunders, 1892.

THE appearance of a new text-book of surgery is a circumstance of no little importance in medical literature, and an event of special interest to those who are concerned in the practice of surgery and the teaching of it.

The text-books of a science serve to mark out the grades or steps of its progress and to preserve the annals of its development. An ideal work of such a kind should be no mere collection of unassimilated facts, no simple *olla podrida* of surgical memoranda. It should be judicial, critical, and selective; it should stand between the learner and the great and bewildering field of learning, and become a medium of communication, an interpreter, a teacher.

If it aims at being encyclopædic it will fail; and if, on the other hand, its main ambition be to become the chronicler of the "last new thing," it will also fail.

A text-book of surgery professes to place before the uninstructed a picture or presentment of the surgery of the time, and if in some points it is lacking, it must be remembered that the writing of contemporary history is notoriously difficult, and that the progress of surgery has, in recent years, been remarkable and revolutionary.

The present volume is the work of thirteen American surgeons, all men of high reputation and all holding responsible posts as teachers. The individual articles are unsigned, and the volume is brought out under the editorship of Dr. Keen and Dr. J. William White, of Philadelphia. The names of these two eminent surgeons will afford a guarantee of the thorough character and sound scientific position of the undertaking, and will secure for the volume a hearty welcome at the hands of the many surgeons in Europe who are familiar with the admirable work with which the editors' names are associated.

As may be expected, the quality of the different articles varies considerably, and the fulness with which the individual subjects are discussed is not to be measured by one standard.

Undue prominence has been given to certain surgical matters, while others of less immediate interest, but of no less importance, receive too scanty a treatment.

Such discrepancies are scarcely to be separated from a first edition, and there is no doubt that in future issues these and other matters will be mended. That an entirely new book, dealing with an intricate and rapidly developing science, should be quite free from faults is not to be expected.

Criticising the work as a whole, it must be spoken of as a text-book of exceptional merit. It places before the reader a simple, concise, and scientific account of the surgery of the present day. It is written in a liberal spirit and with a keen appreciation of the rapid advance which surgery has made and is still making. It is, above all things, well up to date. There is little that is new and at the same time worthy of notice that will not be found between the covers of this volume.

The general style of the work will commend itself to students who will appreciate that its pages are designed not merely to record facts but to teach them. In the majority of the articles the teaching element—the graphic element which arranges, simplifies, and compares—is very conspicuous. Compared with other manuals of like aims and proportions, the present volume can lay claim to be regarded as one of the best text-books of surgery in the English language, and in the matter of the most recent surgery to be superior to any of them.

The work has many distinctive features, and in one particular point differs markedly from similar English text-books. The English manuals in common use deal most fully with what may be termed the rudiments of surgery, the clinical and pathological aspects of the science, and are less discursive on the question of treatment.

The present manual, on the other hand, is conspicuously concerned with treatment, and gives to the clinical aspect of the subject a comparatively slight attention. This tendency of the work—which is, perhaps, too liberally yielded to in one or two articles—is the outcome of the fact that it is in treatment rather than in clinical elaboration that the recent great advances in surgery have been made.

The spelling observed throughout the book will impress the English reader with its peculiarity, and many unfamiliar terms and expressions will remind him that the volume hails from America. Such a statement as that on page 48, in which it is observed that strips of plaster should overlap like the "clapboards of a frame house," will probably be unintelligible.

The book opens with an admirable article on "Surgical Bacteriology," which is clear and concise, and a type of what an article intended for students should be. This is followed by equally good chapters on Inflammation and the Process of Repair, chapters which leave nothing to be desired.

The chapters on what are known as surgical diseases, *e. g.*, erysipelas, pyæmia, rickets, etc., are somewhat scanty, and may be much amplified with advantage. Those on Tuberculosis and Rickets might well be rewritten. In the latter article cranio-tabes is described as a phenomenon of rickets.

The section on skin affections, as represented by Chapters VI. and X., is one of the least satisfactory in the book, and the last-named chapter especially is quite unworthy of the good company in which it is found. The important question of differential diagnosis in chronic ulcers of the skin is ignored, and the description of rodent ulcer, on page 470, had better have been omitted altogether.

The article on Syphilis is in every way excellent. It is concise, exhaustive and admirably arranged, and presents an ably-described account of this protean disease. In the well-illustrated chapter on Tumors we miss an account of the recent researches into the pathology of cancer, and regret the scanty and somewhat stereotyped

account of cysts. The article, however, is simply written and well arranged.

The sections on Fractures, Affections of Muscles, and Orthopædic Surgery, leave nothing to be desired. The chapters are short, but in every respect excellent. Special praise also must be given to the chapter on the Surgery on the Nerves. The chapter on the Surgery of the Vascular System is disappointing and is not up to the standard of the rest of the work. The account of the operation of Antythis (page 235) would not be recognized by that surgeon were he to revisit the earth. The account of the Diseases of Bone forms an excellent chapter. No account is given, however, of osteitis deformans, nor of acromegaly, either in this or in other chapters. In a future edition the account of tumors of bone will no doubt be amplified. High praise must be bestowed upon the chapters on the Surgery of Joints, the Surgery of the Respiratory Organs, and of the Neck.

The articles on the Head and Spine, with which the department of Regional Surgery commences, are among the very best in the book. They are masterly monographs and present the very latest views of the surgery of the parts concerned. It may be said that the article on the Head is in its length and its detailed elaboration somewhat out of proportion to the rest of the work, but no one who reads this excellent paper can regret the indulgence allowed to the writer.

The clearly written chapter on the Spine, in which we recognize the hand of Dr. William White, is beautifully illustrated.

The clever article on the Diseases and Injuries of the Abdomen deals mainly with the operative measures which may be carried out within that cavity. The pathological and clinical aspects of abdominal disease occupy a secondary position and are very scantily considered. From a student's point of view this is to be regretted. Many of the operations described have obtained no hold in sober and established surgery, and will probably not survive the century. The section on Hernia forms the best feature of this article, although in one or two points, notably in the account of cæcal hernia, the writer is behind the times.

The Surgery of the Genito-urinary Tract and of the Female Generative Organs are dealt with in two chapters which are both of exceptional merit, being admirably written and very complete in all points. The clinical sections in these chapters are full and excellently arranged.

The volume concludes with special chapters on the Eye and Ear and a brief epitome of the principles and chief procedures of Operative Surgery. The article on Minor Surgery is especially good and well illustrated.

The work is illustrated by 37 plates and 473 woodcuts. The plates contain many figures and are all original, with the exception of those derived from Maclise.

The majority of the plates are reproductions from photographs. They are in every way most excellent and of the greatest service in giving a graphic representation of morbid processes and clinical features. There is no doubt that the plates will add greatly to the value and popularity of the work.

Of the 473 woodcuts, 52 are original, and all the rest are borrowed. This proportion is somewhat high, and it is to be regretted that the sources from which the drawings have been taken are not acknowledged in the usual place, *i. e.*, with the descriptions of the woodcuts.

In spite of the few defects to which attention has been drawn—and no first edition of a text-book was ever perfect—the work is one of which both authors and editors may well be proud and for which it would be safe to prophesy a useful and brilliant future. F. T.

CURE RADICALE DES HERNIES, AVEC UNE ÉTUDE STATISTIQUE DE DEUX CENT SOIXENTE-QUINZE OPÉRATIONS. Par LE DR. JUST LUCAS-CHAMPIONNIÈRE. 8vo., pp. 724. Rueff et Cie, 1892.

RADICAL CURE OF HERNIA, WITH A STATISTICAL STUDY OF 275 OPERATIONS. By DR. JUST LUCAS-CHAMPIONNIÈRE.

THE author of this handsome work has long been an advocate of the radical cure of hernia. In 1886 he published a small work on the subject, and many have been the papers presented by him to medical societies. He records here a large number of operations extending over a period of eleven years. While Dr. Championnière is enthusiastic over the method of operating for the cure of hernia which he has devised and perfected, he freely admits that in a personal volume of this sort there must be faults arising from detailing the opinions and experiences of one man. All will, however, admit the justice of this observation: that much good comes to science from recording such personal experiences and deductions.

It is his opinion that the proof is incontestable that the radical cure of hernia is real, not theoretical. He believes that such operations are justifiable, because those suffering from hernia are very often unable to wear trusses satisfactorily, and because the liability to dangerous strangulation from muscular efforts or even from a bad cough is always present. When such accidents occur away from centres where a skilful surgeon can be obtained the condition almost always ends in death. He is of the opinion that perhaps not more than one-quarter of those who are compelled to wear trusses find them perfectly satisfactory.

The operation which he adopts consists in the destruction of the peritoneal sac, the thorough dissection of the peritoneum from the surface of the abdominal wall surrounding the ring, and the proper bringing together of these freshened surfaces, the peritoneal edges, and the columns of the ring, respectively, with sutures so as to cause the lines of union of the peritoneum, muscular wall, and skin to be at different levels. He removes all the omentum which he can bring out of the wound, believing this to be an important step in the method. Even in umbilical hernias, whether the operation is done at the time of strangulation or in such hernias not strangulated, the results have been exceedingly satisfactory. Our author believes that in selected cases there is less chance of a return of hernia after his operation than there is of the occurrence of hernia in patients who have never previously suffered from this condition. He believes that cicatricial contraction and the hardness of the tissues resulting from the operation render liability of return less as the time after operation increases. This is especially the case in young subjects, who are recognized as the best patients to be subjected to the radical operation. He remarks on the necessity for the

operator to be thoroughly imbued with a belief in antiseptic methods; in fact, he says that he has written for only such surgeons, because while inefficient antisepsis in an amputation of a limb or of a breast simply increases the pain of the patient and lengthens the time of convalescence, a different event occurs when a surgeon opens with faulty antisepsis the peritoneum or a joint. In the latter case, an operation which is benign when absolutely aseptic, becomes a calamity under opposite conditions.

The author gives three grand indications which it is always necessary to meet as far as possible, since the more successful the surgeon is in these respects, the more chance is there for the radical operation to reach perfection.

It is necessary to modify or destroy the serous membrane where it is funnel-shaped at the inner opening, because the obliteration of this oblique, smooth surface prevents the tendency of the abdominal contents to slide into and continually make pressure at this point. It is necessary to construct, at the weak place in the wall, rings, and canal, the most resisting cicatrix possible, in order to create a barrier which will oppose an obstacle to the abdominal viscera which tend to extrude by forcing their way through the abdominal wall. If it is possible to do so, those portions of the hernial contents which are not necessary to the normal functions of the patient should be removed. This applies particularly to his method of excising the omentum, which he draws forcibly through the opening in order to cut it off as high up as possible. The neck of the sac is closed by a ligature as far up as possible in order that no dimple be left on the inner surface of the abdominal wall. Separation of the peritoneum from the area around the abdominal ring should be done extensively, as the more efficiently this is accomplished the more solid is the cicatrix likely to be. The cicatrix is made strong by deep sutures and methodical compression of the wound.

After discussing the principles of this method, Dr. Lucas-Championnière enters into elaborate and interesting descriptions of the methods of extirpating the sac, destroying the funnel-like dimple in the peritoneum at the site of the internal opening, and resecting the omentum. The steps are illustrated by most comprehensive and intelligible diagrams. Then follow a description of the instruments employed and a consideration of the modifications of the operation demanded by the various forms of hernia. Complications, dressings and anæsthesia each receive attention, and are discussed in the author's characteristic manner.

He finds little necessity for his patients to wear a truss after the operation. He believes that, when the surgeon has accomplished the steps of the operation as he expected, the cured patient needs the truss no more than a patient who has never had hernia; in fact, its use is prohibited. In certain unsatisfactory cases a truss is needed, but then it is of a special form and does not press upon the cicatrix, but on the wall above the scar.

The volume has attached, as a final chapter, a detailed table of the 275 operations done for radical cure of non-strangulated hernia.

So much has been written of late on operations for the radical cure of hernia, and the variety of procedures advocated has been so great, that a work written by one so competent to teach is most timely and instructive. The attention of the reader is fixed by the personality of the writer shown on every page. The fact that the volume deals only with

the one method, which the author himself has found serviceable, is scarcely a disadvantage, when the subject is presented in such a careful and scientific spirit. The extraordinarily good surgical teaching which Dr. Lucas-Championnière has given the profession, in other directions, renders his words on the subject of hernia more than usually convincing.

J. B. R.

ABDOMINAL SURGERY. By J. GREIG-SMITH, M.A., F.R.S.E., Surgeon to the Bristol Royal Infirmary; Lecturer on Surgery, Bristol Medical School, etc. Fourth edition. Pp. xviii., 799. London: J. & A. Churchill, 11 New Burlington Street. 1892. Bristol: J. W. Arrowsmith, 11 Quay Street.

THE appearance of four editions of a surgical monograph in a little over four years, and the simultaneous translation of the present edition into several foreign languages, afford ample proof of its popularity as well as intrinsic excellence. That the original work has received many additions is evident from the fact that it has been enlarged to the extent of two hundred pages.

In the section on nomenclature we note with approval the fact that the author has formally adopted the term "cœliotomy," discarding "laparotomy." His advocacy of its use will do much to favor its general introduction. The general directions with regard to abdominal operations have been thoroughly revised, and such changes appear as are warranted by recent advances in technique.

Section III. does not show many additions, and is still open to some criticism. We have always been of the opinion that too little space is allotted to the description of the removal of inflamed and adherent tubes and ovaries. Considering the importance of the operation and the many possible complications, the beginner is not assisted as much as he might be by the brief reference to them. Nothing is said about the prevention of oozing and the subsequent formation of adhesions by packing raw surfaces within the pelvis with iodoform gauze. One cannot but feel that the disturbances following the removal of the adnexa, especially persistent pain and hemorrhage, are somewhat undervalued. Without desiring to be hypercritical, we would call attention to the fact that there has been a vast improvement in the technique of vaginal hysterectomy since the appearance of the first edition, and that not only the description of the operation, but the section on drainage, is susceptible of still further revision. Strange to say, there is not a word about the treatment of the stump and the plugging of the wound with iodoform gauze, which we, in America, regard as the most important steps in the operation. The use of the drainage-tube after vaginal hysterectomy is rather out of fashion. One may pertinently ask: "Does the subject of vaginal hysterectomy really belong in a work on abdominal surgery?" This question is still more pertinent with regard to the added section on high amputation of the cervix.

We miss any description of the combined operation, the results of which certainly entitle it to some consideration. Again, under the section on hysterectomy (more properly, supra-pubic amputation) for myoma, the author maintains absolute silence with regard to abdominal

extirpation of the fibroid uterus—an operation that has rapidly won favor in Germany and America. But, doubtless, these omissions, as well as the failure to refer to the advantages of Trendelenburg's posture, will be corrected in a subsequent edition, though new ideas ought to travel more rapidly.

Laparo-elytrotomy should be omitted from the chapter on operations on the gravid uterus, as it has long fallen into disrepute. The section on the operative treatment of rupture of the uterus remains unchanged, although it is a subject that has received considerable attention from obstetricians since the appearance of the first edition. The important chapter on ectopic gestation shows internal evidences of careful revision, likewise Section VI., which deals with operations on the stomach. Section VII., on intestinal operations, has been rendered especially valuable by the introduction of all the more recent methods of surgical technique.

Section XIII. contains an exhaustive description of the operation of supra-pubic cystotomy, and concludes with a short section on partial resection of the wall of the bladder, in which, by the way, no mention is made of Pawlik's remarkable case.

The concluding section, on operations for abdominal injuries and inflammations, covers a wide range of subjects—from gunshot wounds to appendicitis—and is full of valuable suggestions. While each edition of this admirable work is a distinct improvement upon its predecessor, and their rapid succession is a proof of its excellence, one cannot avoid the thought that perhaps new editions have appeared too rapidly for the advantage of the book. The lapse of a little longer time between them would permit not only revision, but a more thorough review of the extensive literature of abdominal surgery. This criticism applies principally to operations on the female pelvic organs. While the omission of the bibliography is justified for reasons given by the author, more copious foot-notes are desirable. It is only because we wish to see this work remain, as it has long done, a superior treatise on abdominal surgery, that we have ventured to suggest certain improvements which would add to the value of a future edition. To dwell upon its existing merits would be only to repeat the praises of former reviewers. H. C. C.

A Practical Treatise on Diseases of the Skin. By John W. Shoemaker, A.M., M.D. Second edition, revised and enlarged, with chromogravure plates and other illustrations. New York: D. Appleton & Co., 1892.

Dr. Shoemaker is well known for his contributions to dermatology. In this second edition of his treatise on skin diseases we note considerable new matter and a general revision of the first edition, the result being a better book in every way. The author writes *currente calamo*. Condensation is neither practised nor aimed at, paragraphs sometimes being occupied, it seems to the reader, where sentences might almost suffice. This tendency to verbosity is notable, and in another edition we hope to see the volume pruned, thereby making it more valuable as a work of reference.

The chapter on the general pathology of the skin has been augmented and improved by judicious remarks on the bacteriology of cutaneous diseases, a department of dermatology that has advanced remarkably in the past few years. A useful chapter has also been added on the proper employment of electricity, a subject which heretofore has received too little attention in the text-books. Good advice is given concerning the importance of diet in cutaneous medicine, but the author, we think, speaks too positively on some questions in order to carry the point; thus, it seems like forcing the importance of diet to read that lichen planus (a well-recognized neurotic affection) "is often due to impaired digestion;" that "herpes zoster calls for an abundant supply of fatty articles of food," when it is well known that this disease pursues an acute self-limited course and is not apt to recur, and that "nutritious food should be an essential part of any plan of treatment in sycosis."

The nomenclature, we are pleased to note, is sound, and is entirely in accord with that employed by the best teachers of the world. The classification also can be commended as the best, being that of Hebra. It presents the subject on the basis of pathology, which has the merit of being a stable foundation. But we must protest against regarding neoplasmata as synonymous with "tumors," in which class is placed lupus erythematosus, a disease that never shows itself in any form suggestive of a tumor. The author separates completely lichen planus from lichen ruber, one of the points of difference being, it is stated, that in lichen planus there is little or no itching, whereas in lichen ruber this symptom is intense. Surely, simple lichen planus may also itch violently. The acute form of lichen planus should have been alluded to. Herpes iris receives only brief notice, between herpes facialis and herpes progenitalis, with which affections it has no close relationship. Herpes gestationis is justly regarded as the dermatitis herpetiformis of pregnancy. Hydroa is made a distinctive disease, but the description fails, it seems to us, in differentiating it from pemphigus, herpes iris, and dermatitis herpetiformis. It is questionable if the term hydroa is at all needed in dermatology. Inflammatory fungoid neoplasm, or, better, granuloma fungoides, receives rather scant attention, the disease being one about which much has been learned of late. Paget's disease of the nipple is discussed with eczema of the breast, and, likewise, hardly receives the mention it deserves.

We miss reference to keratosis follicularis, erythrasma, actinomycosis, and angio-keratoma, diseases which lately have been considerably written about. On the other hand, we note full descriptions of Savill's variety of dermatitis, recently described, and of dermatitis herpetiformis.

On the subject of therapeutics the author speaks highly of lanolin, and is opposed to the use of petrolatum as a base for ointments where penetration into the skin is demanded. The oleates, about which the author has written at length elsewhere, are regarded as most valuable remedies, and he remarks that "the professed lack of faith in and condemnation of them by a few are entirely due to the fact that they have been used improperly and hastily, and erroneous conclusions drawn from imperfect experience with them." Of hydrastine hydrochlorate, we are told that good results may be expected from it in hyperidrosis, seborrhœa, acne, eczema, and ulcers, in the strength of from two to six grains to the ounce of water; and that the fluid extract and extract of ery-

throxylon coca will produce a sedative action upon irritable conditions of the integument. Naphthol is highly extolled as a deodorant, detergent, and stimulant. Hamamelis is considered a valuable remedy, acting as an astringent and sedative, useful in eczema, erysipelas, rosacea, seborrhœa, and varicose ulcers. Aristol and peroxide of hydrogen are esteemed, and massage as a method of treatment in numerous diseases is well thought of. On almost every page one may note that the author inclines to be enthusiastic over the power of drugs to cure. Most of those referred to receive more or less praise, the tendency being toward the use of the superlative rather than the comparative degree in discussing the subject.

Throughout the volume formulæ are so freely introduced that the formulary given at its close seems unnecessary. To give a series of diverse formulæ, merely stating that they are sometimes of use in this or that disease, proves of no practical value to the physician. For prescriptions to be of service, it must be stated for what variety, form, and stage of the disease they are applicable. Special knowledge is required for the successful treatment of skin diseases, and this consists largely in knowing when and how to use the remedies. This information the ordinary formulary does not give, and hence its comparative worthlessness to the general practitioner. Therapeutics in this form are apt to do more harm than good. Several excellent photographs grace the volume, which is handsomely got up by the publishers. L. A. D.

HYGIENE OF THE SICK-ROOM. By WILLIAM B. CANFIELD, A.M., M.D., Lecturer on Clinical Medicine and Chief of Chest Clinic, University of Maryland, etc.

THE aim of this little book, which is a brief exposition of the modern views of bacteriology in their relation to the causes and prevention of disease, is not fully demonstrated by its title. The hygiene of the sick-room in reality involves attention to many details not properly within the scope of the subjects to which the author confines his remarks.

This manual, as the author states, is the outcome of a series of lectures delivered before the University of Maryland Training-School for Nurses, and is intended for the use of "nurses and other intelligent women." It is prefaced by a chapter on the methods of bacteriological classification and investigation, and, in a series of succeeding chapters, considers the subjects of infection and disinfection in their application to the management of the individual diseases attributed to the action of germs. In closing, the author gives some general hints on the subject of ventilation and heating, immunity and protection from disease, and the proper selection and preparation of food.

The author falls at times into the common error of using terms and explanations too technical for his class of readers, and for this reason his book is probably best adapted to teachers of nurses and to the select few among nurses whose educational qualifications are sufficient to make them discriminating in their work. Its concise presentation of a very important theme should extend its usefulness to physicians as well as nurses. A. M. F.

PROGRESS

OF

MEDICAL SCIENCE.

THERAPEUTICS.

UNDER THE CHARGE OF

REYNOLD W. WILCOX, M.A., M.D., LL.D.,

PROFESSOR OF CLINICAL MEDICINE AT THE NEW YORK POST-GRADUATE MEDICAL SCHOOL AND HOSPITAL; ASSISTANT VISITING PHYSICIAN TO BELLEVUE HOSPITAL.

Useless or Dangerous Medication in Angina Pectoris.

Dr. Henri Huchard recalls the fact that for more than ten years he has employed the iodides in from fifteen to forty-five grains for a daily dose, and continued for several years, the attacks being relieved by nitrite of amyl or nitro-glycerin. Among the useless or dangerous medications he would cite: 1. Cardiac tonics. The anginas are almost always of arterio-sclerotic origin, where the pulse tension is already high, therefore digitalis and ergot are contra-indicated, while sparteine and convallaria are useless. Caffeine and strophanthus may, in some cases, produce favorable results. 2. Belladonna and bicarbonate of soda he regards as not only useless but harmful; they are useless because the bicarbonate of soda has no influence upon the atheromato-sclerotic processes, and they can be harmful because the belladonna excites the cerebral centre of the pneumogastric and the intra-cardiac regulatory apparatus and produces a contraction of the arteries; in toxic doses only, does atropine give rise to the opposite phenomena. 3. Electricity, untrustworthy or dangerous, is almost always contra-indicated, and should only be used in those cases when there is threatening syncope, then cutaneous electrization (faradization) of the præcordial region. It is not to be recommended, because it can instantaneously stop the heart contraction, and it avails naught against the pain which it may even provoke. The constant current, far from being subject to the same dangers, has produced some good results, but the cases are insufficient to deduce therefrom the indications of a special medication. The faradic currents may be harmful, the constant are usually useless. 4. Cocaine, inhalations of oxygen. The former is dangerous, in that it produces vaso-constriction and cerebral ischæmia, thus predisposing to syncope; the inhalations of oxygen are useless, and it is readily seen that they cannot act quickly

enough to suppress an attack. 5. Antipyrine, as well as similar drugs, as phenacetine and exalgine, have no favorable action upon the circulation, and if it be true that they determine a dilatation of the cutaneous vessels and a contraction of the central arteries, they will be absolutely contra-indicated in the treatment of angina pectoris. 6. Bromide of potassium: its efficacy has been exaggerated in angina due to the condition of the coronary arteries, when a daily dosage of sixty grains has not been exceeded. Larger doses may rapidly produce a slowing, with weakening of the cardiac action, contraction of the smaller vessels, elevation of the blood-pressure, and, in his experience, are without the good results claimed by others, especial objection being made to the association of the three bromides. 7. Chloral, paraldehyde, sulphonal, urethane. As an hypnotic and anæsthetic, chloral can be used. It determines not only a slowing but a real enfeeblement of the cardiac contractions; in large doses it is a cardiac poison, and can stop the heart in diastole, which forbids its use in degeneration or debility of the heart. It should not be ordered in massive doses, fifteen to thirty grains being ordinarily sufficient. Paraldehyde has been used without certain result, the causes being inconstancy of its action, unfavorable properties as regards respiration and the composition of the blood. Sulphonal acts very slowly; even if it is harmless, the attack will be ended before the remedy takes effect. Urethane presents the same objection, with the additional one of uncertainty of its action. 8. Salts of potash. One recognizes their unfavorable action upon the cardiac muscle, and, besides, if the kidneys act unfavorably (and renal insufficiency is frequently met with in those suffering from arterial sclerosis), they incompletely eliminate all poisons coming from without or formed in the organism. 9. Bloodletting is slow in its results, and may prevent, to a certain extent, the attack, but is incapable of curing it. General bloodletting favors syncope, and for this reason should be absolutely condemned. 10. Chloroform inhalations are to be considered when nitrite of amyl or morphine injections have completely failed. Then the inhalations should be short, interrupted by free inspiration of air, with finger on the pulse and watching the face of the patient. 11. Various means, as inhalations of ether, ingestion of ice, immersion of left arm in hot water, are all uncertain, are not applicable, and do not succeed, save in the pseudo-anginas. For his own treatment, stated at the commencement of this paper, it can be said that it combats the pain, it is directed against the arterial sclerosis the development of which prepares for the degeneration of the cardiac muscle, against the lesion of the coronary arteries, and especially against the cardiac ischæmia which constitutes the principal and only danger of this formidable combination.—*Revue générale de Clinique et de Thérapeutique*, 1892, No. 39, p. 609.

Alumnol.

Drs. R. Heinz and A. Liebrecht present an interesting contribution in this new astringo-antiseptic. Taking the idea from dermatol, it is sought to unite an aromatic reducing acid to a specifically working base. After two years experimentation the most suitable combination appeared to be the aluminium salts of the naphthol sulpho-acids. Alumnol is such a salt (with 5 per cent. aluminium and 15 per cent. sulphur). This salt is a fine, white, non-hygroscopic

powder, easily soluble in cold water; solutions of 40 per cent. and over, made with hot water, remain without precipitation on cooling. It is soluble in alcohol, giving rise to a beautiful blue fluorescence, also in glycerin, but not in ether. On considerable exposure to the air it becomes darker in color; it is of acid reaction; it precipitates albumin, differing from other astringents in that the resulting precipitate again dissolves in the excess of albumin; thus this remedy will act deep in the tissues, and not superficially as do other astringents. Laboratory experiments, to determine its antiseptic value, showed that a 1 per cent. solution after twenty-four hours destroyed the bacilli and spores of anthrax, pyocyaneus, prodigiosus, etc. Of greater power is alumnol to check the development of bacteria; $\frac{1}{100}$ of a 1 per cent. solution can interfere with the further growth of anthrax-, typhus-, cholera-, Finkler-Prior-, pyocyaneus-, prodigiosus-, staphylococcus-cultures; a $\frac{4}{10}$ of a 1 per cent. solution can absolutely prevent their growth. The astringent action can be demonstrated in from $\frac{1}{100}$ to 1 per cent. solution upon the mesentery of a frog. Stronger solutions, as of other astringents, are irritating; the first appearance of this symptom is with a 5 per cent. solution, while a caustic action has not been observed with 10 per cent. solutions.

In surgical practice, in wound cavities and suppurative surfaces, the suppuration is promptly checked; then it is used by irrigation in $\frac{1}{2}$ to 2 per cent. solution. In small abscesses and fistulous tracts a 10 to 20 per cent. solution produces caustic effects with rapidly cleaning and healing. Ulcers with sluggish granulations are benefited by stimulating solutions and 3 to 6 per cent. ointments. In gynecological practice, especially in gonorrhœal endometritis, this remedy is of value, used in 2 to 5 per cent. pencils; for speedy and radical results the percentage may be increased to 10 or 20. For tamponade of the uterus a gauze dipped in a 10 to 20 per cent. solution can be used. As a vaginal douche, $\frac{1}{2}$ to 1 per cent. solution, twice daily, has given good results. In dermatology, in plaster-mull and varnish—the latter especially, giving a protective dressing. In chronic cases a considerable concentration, 10, 20, to 50 per cent., is advisable. In gonorrhœa in men, according to Chotzen, a 1 to 2 per cent. aqueous solution, injected three or four times daily, causes the gonococci to completely disappear within three to six days. To avoid irritation of the mucous membranes the strength of the solution must then be diminished. In otological practice, as a powder, it has been found of value in otitis media purulenta and similar conditions. In ophthalmological practice, as a 4 per cent. solution, it has been employed in blennorrhœa for the preliminary cleansing of the eyes of pus, in order to make use of nitrate of silver.—*Berliner klinische Wochenschrift*, 1892, No. 46 S. 1158.

Digitalinum Verum.

Dr. Franz Pfaff, recognizing the uncertainty of the action of the various digitalins, which has forced many practitioners to discard them in favor of the tincture or infusion, has carried out some experiments with this substance which is prepared from the digitalis purpurea. He has administered about a thousand single doses to sixteen patients, and has not as yet observed any cumulative action. He believes this to be not only more rapidly absorbed,

but as well, rapidly eliminated. The daily dose is from one-eighth to three-quarters of a grain, which, indeed, can be administered subcutaneously in diluted alcohol to which cocaine is added.—*Correspondenzblatt für Schweizer Aerzte*, 1892, No. 22, S. 696.

Massage in Megrim.

Mr. A. Symons Eccles has treated fourteen cases of severe megrim which were under his constant observation. So far as the drug treatment has availed he has found that largely diluted doses of hydrochloric acid given with or directly before food, followed by a capsule containing β-naphthol shortly after food, are useful in preventing the dyspeptic conditions which he believes are causative of paroxysmal hemicrania. If it is true that the occurrence of megrim is due to disordered digestion, in the sense that, coupled with sluggish portal circulation, there is an interference with the quantity or quality, or both, of the gastric secretion, that with this insufficiency of secretion there is also inactivity of the gastro-intestinal motor apparatus, permitting the generation, accumulation, and absorption of toxic matters in excess, so that the liver is unable to cope with them either by arrest, combination, or secretion with bile, it seems that the indications for treatment are to improve the circulation through the chylo-poietic viscera, and at the same time to aid the activity of the liver in its function as a policeman in guarding the system against the intrusion of evil-doing leucomaïnes and ptomaïnes, while such a diet is prescribed as shall be easily assimilated, demanding as little activity and richness of secretion as possible. These indications are met by: 1, rest in the recumbent position; 2, massage of the abdomen; 3, general massage of the whole body at least once daily; 4, the dietetic treatment—milk, green vegetables, etc.—*The Practitioner*, 1892, No. 291, p. 161.

The Treatment of Inebriety.

Dr. Norman Kerr contributes a very interesting paper upon this ever-timely topic. He cites the failure of all moral, ecclesiastical, and legal measures even when supported by public opinion. He believes that there is a gradually-increasing amount of success achieved from the intelligent appreciation of the etiological and pathological relations of inebriety. Our first efforts must be concentrated upon the immediate and acute symptoms by rest, nursing, and light but sufficient nutriment, with withdrawal of the poison. The next undertaking will be elimination of the alcohol from the system, and the correction of the morbid condition of the organs and structures. The ultimate hope of a permanent cure will lie in the restoration of will-power. In all the progress toward recovery, while medicinal remedies are useful, hygienic, intellectual and moral influences will play an important part.—*The Medical Magazine*, 1892, No. 3, p. 258.

A Case of Ether Dipsomania.

Dr. Jules Christian reports a rare case where death, following epileptiform convulsions, resulted after repeated attacks for more than sixteen years. The attacks generally began with symptoms of malaise, inappetence, sensa-

tions of weight at the epigastrium, coated tongue, restlessness, anxiety, irritability, and complaints of palpitation of the heart. The patient then purchased ether, hailed a *fiacre*, made himself comfortable, and inhaled his favorite liquid. If the process was carried only to the stage of exhilaration he became gay, sang, laughed, and became talkative, and amused himself as a *gamin*. If he stopped at this point he became calm after a series, more or less prolonged, of extravagant actions. Generally, however, the inhalations were continued and the excitement became more active, and he fought with the coachman and bystanders until subdued. The habit was acquired during his service with the ambulance train in the Franco-Prussian war, and apparently no treatment save incarceration at Charenton was of value.—*Journal de Médecine de Paris*, 1892, No. 45, p. 516.

The Theory of Psycho-therapeutics.

Dr. Van Eeden, by the term psycho-therapy, wishes us to understand: every method of healing which opposes disease by psychical means, or by the intervention of psychical functions. Recognizing suggestion as the principal psychical process by which a sufferer can be aided, he insists that we must suggest without air of authority, and cure without heightening suggestibility, because permanently heightened suggestibility means a diminution of psychical cohesion, and consequently a weakening of the power of resistance. The centralization of the psychical functions must be encouraged, for the psyche is composed of an agglomeration of forces working together, and order, equilibrium, and homogeneity of government are indispensable for the vigor and resistance of any organism. It is therefore evident that the seat of direction must lie in the soul's conscious state, and the executive authority in conscious volition. The principles actuating a therapeutist should be, then, slight receptivity for external impulses, a centralization as powerful and an ideo-plastic force as strong as possible, the last being strongest with the uneducated, with children or hysterical subjects; whereas with such, suggestibility and receptivity are generally large, and centralization very insignificant. The best means to employ are exercise, education, and training. From his experience he holds a firm conviction that psycho-therapy, in this way developed by a larger number of superior minds, will prove to be an immense advancement in the noble art of healing.—*The Medical Magazine*, 1892, No. 3, p, 232.

Recent Physiological and Chemical Research in the Question of Anæsthesia.

Mr. Dudley Wilmot Buxton introduced the discussion at the annual meeting of the British Medical Association for 1892, summarizing as follows: 1. Chloroform in anæsthetic doses, when no asphyxial conditions are present, exerts an effect directly upon the heart muscle, leading by its weakening to a simultaneous cessation of the action of heart and respiration. 2. In cases where respiration persists after, apparently, the heart has ceased to beat, when artificial respiration fails to restore the natural respiration, death is due to the direct toxic action of the chloroform upon the heart. 3. That the fall

of blood-pressure is probably due primarily to the direct action of chloroform upon the heart muscle. 4. That, even when slight blood-pressure fall may be protective, it reveals a condition of the circulatory system itself a source of peril. 5. That impurities in the chloroform have some, but what effect we do not at present know. 6. That the elimination of these impurities will not necessarily remove the perils of chloroform. 7. That the experiments upon the lower animals as regards shock are not a reliable guide, taken by themselves, in studying shock in human beings.

Dr. Lawrence Turnbull stated that from inquiries, he and Dr. T. Melvin Lamb, of the Surgeon-General's Office, Washington, had concluded that there were fewer deaths from ether than from chloroform, but that it was necessary to watch both the respiration and the heart.

A note by Mr. Thomas S. Cullen, of the Gynecological Department of Johns Hopkins University, answers the question of how much chloroform should be given, by stating that the pupil should be always kept well contracted. The rule is only to be deviated from when the abdominal cavity is to be irrigated with the salt solution. Then, about two minutes before irrigation, the anæsthetic is pushed until the pupil is midway between contraction and dilatation; as soon as the solution is poured into the cavity the pupil again contracts on account of the stimulant action. Sometimes, when the pupil is midway between contraction and dilatation, one may be in doubt as to whether the patient has received more than the desired amount or not enough. On ceasing the administration for a few seconds, if not enough has been given, the pupils will dilate and the patient may stir; if more than desired, the pupils will contract.

Dr. Ralph Stockman believes that in heart failure during chloroform inhalation the injection of ether is probably of value, but in respiratory paralysis it must aggravate the condition.

Mr. Rumboll believed that it was safer to precede the administration of ether by nitrous oxide gas than to give ether alone as all struggling was avoided; undoubtedly, to patients suffering from a weak heart, the violent struggling, when ether was being given alone, must be a source of danger.—*British Medical Journal*, 1892, No. 1661, p. 933.

The Treatment of Tetanus.

Prof. Peter Albertoni has collected the cases of tetanus reported during the last decennium, 176 in all, of which 139 were cured (78.9 per cent.). The treatment was varied, comprising all the well-known methods. This collection of cases shows that the disease is not so fatal as is commonly supposed, and also that it has been cured by many and diverse remedies, or that it "may get well of itself." The opinion is as old as Hippocrates, that a case of tetanus, which has successfully outlasted the first week, has greater chances of recovery. Reviewing the recent work which has been done with antitoxin, he calls attention to the antiseptic local treatment which these patients received. From the clinical standpoint, he believes that the best results are obtained from chloral, and, judging from the observations of Carpenter and Todd, and of Gaglio, the application of ice to the spine would be of material assistance.—*Therapeutische Monatshefte*, 1892, Heft 9, S. 437.

Severe Traumatic Tetanus Cured by Rest and Absolute Isolation.

Dott. Antonio Beorchia-Nigris reports a single case where the seat of the infection was an eczematous ear. There was marked trismus, *risus sardonicus*, general muscular rigidity and tonic contractions following slight external stimulation. Removal of the lobule was deemed advisable, which was done under antiseptic precautions. An abundant liquid diet of eggs beaten in milk, a little Marsala wine, calomel and jalap to combat constipation was advised, with rest in bed, absolute isolation in a darkened room, the ears being stopped with cotton. The result was complete recovery in twenty-one days.—*Gazetta degli Ospitali*, 1892, No. 121, p. 1126.

Salol in the Organism.

Dr. Paul Cornet has carried out some valuable experiments to ascertain whether salol is absolutely and exclusively decomposed in the intestine. Making use of dogs, it was found that in an hour, at least, the decomposition is exclusively in the intestine, but this statement in regard to intestinal decomposition of Mencke and Salhi ceased to be true at the end of two-and-a half to three and one-quarter hours after the ingestion of thirty or forty-five grains of salol. It was also found that there was present, in the feces and in the intestine, undecomposed salol, determined by Lépine by the microscope, and by the author by analysis. As to the exclusive action of the pancreatic juice, admitted by Sahli and Lépine, it is strongly contestable, for salicylic acid has been found in the stomach. Besides, Papuli, Renzi, Réale, and Gley have weakened, for other reasons than the author's, the pancreatic theory. Finally, Sievers and Ewald have proposed this drug for determining the motor power of the stomach. Its slow decomposition in this viscus seems to destroy the value of this procedure. Conclusions: 1. That salol at first decomposes in the intestine. 2. In the stomach salicylic acid is found two or three hours after the ingestion of thirty to forty-five grains of salol. 3. Salol is not completely decomposed in the intestine, for it is found in the feces.—*Le Progrès Médical*, 1892, No. 44, p. 320.

The Medical Treatment of Acute Tonsillitis and Pharyngitis.

Dr. James E. Newcomb has made a comparative study based upon one hundred and sixty-nine cases. Under the title of pharyngitis he makes reference only to the various aspects of the catarrhal inflammations, and under tonsillitis he includes the lacunar and parenchymatous forms of the disease, and as well, peri-amygdalar cellulitis or quinsy. He concludes as follows: 1. In salol we have a remedy which, in the vast majority of cases, will give relief quicker than any other; where it utterly fails, as it may occasionally, tincture of the chloride of iron with potassic chlorate seems to be the best substitute. This latter combination finds its best field in those patients who have already had many previous attacks, and in which there is more or less of an interstitial deposit of connective tissue in the mucous membrane. Salol is, to most patients, far more agreeable than sodium sal-

icylate, and vastly more so than the nauseating guaiac. 2. If peri-amygdalar infiltration has already set in it is an open question in every case as to whether we shall be able to prevent suppuration. An incision is indicated wherever there is engorgement, even though no pus has yet been formed. The latter rarely comes before the fourth day. If it is not found, no especial discomfort, then or thereafter, results to the patient from the incision, particularly if a little cocaine is used. 3. If pus is present, free incision toward the median line is indicated, to be followed by a hot bicarbonate of soda gargle, together with poultices on the outside. 4. Care should be taken to thoroughly open the bowels with a mercurial and a saline at the commencement of the treatment in every case.—*Journal of the American Medical Association*, 1892, vol. xix., No. 24, p. 685.

The Peroxide of Hydrogen in Diphtheria.

Dr. Benjamin Ward Richardson adds a note as to the use of a thirty-volume solution in the local treatment of diphtheria: that it should never be used except upon open surfaces. The oxidation is so rapid in the presence of pus and similar disturbing substances that the effect is practically explosive in character. For the destruction of pus, weaker solutions (ten volumes) will answer well enough.—*The Medical Press*, 1892, No. 2792, p. 474.

The Icebag as a Therapeutic Agent.

Dr. D. B. Lees believes that it will soon be recognized that many visceral inflammations ought to be treated, not with warmth, but with the local application of cold, precautions being, of course, taken to prevent any undue chilling of the body generally. In an account of eighteen cases of lobar and broncho-pneumonia, previously reported, he noted that the improvement caused by the icebag was not simply a reduction of temperature (though that often occurred to the extent of three or four degrees), but there was also a remarkable diminution of the physical signs over the diseased area, and an amelioration of symptoms. He believes that it is capable of saving some lives which would be lost if fomentations or poultices were employed; that it reduces the severity of the symptoms, relieves pain, gives comfort to the patient, and brings about an earlier and a more rapid convalescence. In pleurisy and pericarditis the effects are quite as apparent. Clinical observations of its use in other inflammatory conditions are cited, and the paper closes with the caution of care and watchfulness on the part of the physician and nurse, when no risk may be apprehended.—*The Clinical Journal*, 1892, No. 1, p. 4.

The Treatment of Severe Hepatic Colic by Cold Full Baths.

Dr. Humbert Mollière reports two successful cases which received respectively twenty-one, and one hundred and one baths, the time being from ten to fifteen minutes, and the temperature 71° F. to 82° F. He advises, in addition, injections of cold water, one quart for each injection, not more than two quarts being used, and the number limited to six, in accordance with the plan described by Krull.—*Lyon Médical*, 1892, No. 48, p. 433.

The Treatment of Cirrhosis of the Liver.

Dr. Dujardin-Beaumetz has used hippuric acid in daily doses of from fifteen to twenty grains neutralized with milk of lime, practically, then, a hippurate of lime in lemon syrup, to relieve hepatic congestion. Although calomel has been recommended for its action upon the liver, and for its purgative and diuretic properties, yet he has not used it because of the possibility of salivation and the uncertainty of its curative effects. Copaiva, not the balsam, but the resin, which is better borne by the stomach, in the amount of one drachm per day, has been strongly recommended as a diuretic. With diuretics can be combined purgatives, but with great caution, for they may cause hemorrhage and weaken the patient. Following Lancereaux, he recommends potassium iodide, especially in syphilitic and alcoholic cirrhosis, to the daily amount of from thirty to sixty grains, administered in beer or *café noir* at the meals. A milk diet added to this treatment will favor diuresis or, under the recommendation of Semmola, the daily dose of the iodide may be dissolved in a quart of water. In some cases a cure may be hoped for, but this depends more upon the condition of the liver than the treatment employed. In the atrophic forms failure will result.—*L'Union Médicale*, 1892, No. 133, p. 685, and No. 134, p. 697.

The Treatment of Ascites by Cream of Tartar and Tonics.

Dr. M. Sasaki has made use of cream of tartar in large doses (two to eight drachms daily) with the addition of strengthening remedies, in the treatment of ascites resulting from cirrhosis of the liver and hepatic syphilis. He reports twelve cases where this plan of treatment has been carried out, the tonics employed having been some form of iron, quinine, cod-liver oil, or red wine. Continuance of the remedy for several months may be necessary.—*Berliner klinische Wochenschrift*, 1892, No. 47, S. 1184.

Digitalis in Aortic Disease.

Dr. W. H. Broadhead, in the discussion upon the cardiac tonics at the annual meeting of the British Medical Association for 1892, points out that in aortic regurgitation failure of compensation is manifested either by defective propulsion of blood into the arterial system, or by obstruction on return, working through the lungs and right heart. When the symptoms are of the first class the effects of the administration of digitalis are uncertain; in some there is reason to believe that it has precipitated a sudden, fatal termination. In the second class of cases we may expect the same benefit as in mitral regurgitation. In aortic stenosis the same argument holds, and the cases in which digitalis is to be used should be selected as in the instance of regurgitation. Here it is even less competent to overcome the direct effects of obstruction than of regurgitation, and the left ventricle may be injured if stimulated to drive its contents through a narrowed orifice. More relief is often obtained by relaxing the arterioles by means of nitroglycerin, deducting, thus, the arterio-capillary resistance from the total work with which the heart has to contend.—*British Medical Journal*, 1892, No. 1665, p. 1154.

The Treatment of Syphilis by Dog's Serum.

Mr. Edward Cotherell, reports that his experiments in two cases have shown good results. The *rationale* appears to be the marked bactericidal action of freshly prepared serum, and it is essential that the serum should be used when perfectly fresh, otherwise the results will be disappointing. The amount used is about half a drachm, injected into the back, twice weekly, under antiseptic precautions. The mode of preparation is to take blood aseptically from the carotid artery into a large sterilized test-tube which has a little oxalate solution to prevent coagulation. When about three parts filled the tube is plugged with cotton, and the tubes put in a centrifugal machine by which the corpuscles and plasma are separated. The plasma is then decanted off and allowed to clot, from which the serum separates, and can be drawn off into small sterilized test-tubes which are plugged with cotton. Afterward, a necropsy is performed upon the dog, and the serum only retained if the animal is found to be perfectly healthy.—*The Medical Press*, 1892, No. 2792, p. 475.

The following papers are worthy of notice:

"The Treatment of Myxœdema by Injections of the Liquid Extract of the Thyroid," by M. Brown-Séquard, in *Archives de Physiologie*, 1892, No. 4, p. 752. A brief statement of the work done by various experimenters, recommending, as important, the use of porcelain or aluminium filters in the preparation of the extract.

"The Coagulation of Sulphate of Quinine," by M. E. Duclaux, in *Ann. de l'Institut Pasteur*, 1892, No. 10, p. 657. An interesting pharmaceutical study.

"The Antitoxic Action of the Blood-serum of Patients Recovered from Cholera," by Dr. A. Lazarus, in *Berliner klinische Wochenschrift*, 1892, No. 43, S. 1071. Its protective influence established for guinea-pigs.

"The Action of Abdominal Massage in Habitual Constipation," by Dr. Anton Bum, in *Wiener medizinische Presse*, 1892, No. 46, S. 1817. Massage of the abdomen fulfils the causal indication of strengthening the abdominal muscles and those of the large intestine.

"The Action of Salophen, and the Elimination in Crystalline Form of This and Related Remedies through the Skin," by Dr. Richard Hitchmann, in *Wiener klinische Wochenschrift*, 1892, No. 49, S. 702. A very valuable contribution, and throwing much light upon the behavior of this remedy in the organism.

"The Subcutaneous Injections of Phosphate of Soda in Diseases of the Nervous System," by Dr. Crocq, Jr., in *Gazette hebdomadaire de Médecine et de Chirurgie*, 1892, No. 42, p. 499.

"The Value of Hypodermatic Injections of Guaiacol and Iodoform in the Cure of Pulmonary Tuberculosis," by Dott. Davide Turia, in *Gazetta degli Ospitali*, 1892, No. 118, p. 1098.

"Malarial Cachexia and its Treatment," by Dr. Joseph Sharp, in *The American Therapist*, 1892, No. 4, p. 69.

"The Hæmato-therapy of Tetanus," by Dott. Giuseppina Catani, in *Gazetta degli Ospitali*, 1892, No. 120, p. 1118.

MEDICINE.

UNDER THE CHARGE OF

W. PASTEUR, M.D. LOND., F.R.C.P.,

ASSISTANT PHYSICIAN TO THE MIDDLESEX HOSPITAL; PHYSICIAN TO THE NORTHEASTERN HOSPITAL FOR CHILDREN;

AND

SOLOMON SOLIS-COHEN, A.M., M.D.,

PROFESSOR OF CLINICAL MEDICINE AND APPLIED THERAPEUTICS IN THE PHILADELPHIA POLYCLINIC; PHYSICIAN TO THE PHILADELPHIA HOSPITAL.

SUBACUTE PULMONARY ŒDEMA OCCURRING ABOVE A DIMINISHING PLEURAL EFFUSION.

DR. JAMES CALVERT (London) communicated the following case at a recent meeting of the Clinical Society of London:

A man, aged forty-five years, was admitted into hospital on September 22, 1891, with pleural effusion. On September 23d the whole of the left side was dull with fluid; it was aspirated, and forty-five ounces of clear yellow serous fluid drawn off, followed by partial expansion of lung above the fourth rib. The position of the heart beneath the sternum was not altered by the aspiration; it was evidently held by adhesions. Two weeks after the operation the lung above the fourth rib became œdematous, with abundant subcrepitant râles, and profuse expectoration of gray, frothy, watery fluid. During these two weeks the effusion had diminished, which was evidenced by the sinking in of the intercostal spaces, by the resonance of the sound side extending to the left of the sternum, and by the breath sounds becoming audible at the base behind; the upper limit of fluid could not be percussed out with accuracy because of pleural thickening and adhesions. The œdema persisted for three weeks and then began to decline gradually, so that when the patient left the hospital in January only an occasional crepitation could be heard. He attended as an out-patient for six months, and during this time he had no cough, no expectoration, no crepitations, and he gained weight and strength. The temperature after the aspiration was normal throughout. This subacute œdema, evidently different to the acute œdema occurring immediately after aspiration, was not due to an increasing effusion compressing the lung, or to a rupture of the effusion into the lung, or to new growth obstructing the venous return, but was probably due to obstructed venous return in a lung held by adhesions and endeavoring irregularly to expand in presence of a diminishing effusion. Practical point: These crepitations, limited to one apex and persisting for weeks, were not due to phthisis.

THE IRREGULAR HEART.

At a recent meeting of the Medical Society of London, DR. A. E. SANSOM read a paper on the above subject based on an observation of 47 cases pre-

senting pronounced cardiac irregularity for long periods, all of them being independent of structural disease of the heart. They were considered in two groups, the smaller being made up of ten cases of Graves's disease. The associations of cardiac irregularity in the larger group were: 1, Dyspepsia; 2, syphilis; 3, osteo-arthritis; 4, disturbances of the sense of hearing and naso-pharyngeal affections (illustrative cases were given under this head which tended to show that a reflex from the naso-pharyngeal tract and from the neighborhood of the auditory mechanism was often a potent cause of cardiac irregularity; 5, influenza (instances were given of special forms of arrhythmia due to the disturbance of the nervous mechanism by this cause); 6, mental disturbances and the effects of severe nervous shock; 7, cases without notable associations (these were parallel with those cases of rapid heart which showed no notable morbid alliances).

The author submitted that all forms and degrees of irregularity, from the slight to the most pronounced, were to be ascribed to disturbances of the nervous mechanism of the heart.

The cases without notable associations might point the lesson that whilst the central disturbance from which the other affections of Graves's disease were offshoots brought about in the majority abnormal rapidity of the heart's contractions, in the minority it induced irregularity. So in many instances arrhythmia cordis might be considered a *forme fruste* of Graves's disease, only it was better to express it that the *ensemble* of the phenomena of Graves's disease was due to the extension from the area of disturbance, which was focally that portion of the nervous system which was concerned with the regulation of the heart's movements. In all such cases, whether manifesting tachycardia or arrhythmia, outbreaks of dyspnœa or of gastro-intestinal disturbance—vagus storms, as he had termed them—were frequently observed. It seemed probable that whilst sudden overstrain was more likely to produce a tendency to morbid acceleration, the more chronic forms of mental depression tended to be associated with irregularity.

Ptomaine Poisoning.

Dr. Thomas Stevenson (Official Analyst, Home Office) communicates the sequel to the case of a military officer, aged twenty-one years, who died in twenty-four hours with symptoms of acute poisoning after partaking at breakfast of six hot sardines on toast, with coffee.

At the post-mortem, made next day in cool, damp weather, lividity and rigidity were both well marked. The features were so bloated as to be unrecognizable. The whole body was emphysematous but the hands and feet, which appeared blanched by contrast. The mucous membrane of the stomach and the rugæ of the intestine were emphysematous. The liver was hyperæmic and friable posteriorly.

Four days later the opened tin of sardines, stomach contents, and some vomit were received for analysis.

"The sardines had no unusual appearance, and looked quite fresh; the tin itself was bright and uncorroded. Their odor was peculiar, but not offensive. Some of the fish were intensely toxic; of six white mice, which were fed on them, four died; also a rat; whilst two of the mice and a young cat, fed on

two of the fish, were unaffected. Two mice appeared to have immunity, for, when fed on portions of fish which had been fatal to other mice, they did not suffer. From four of the fish, weighing two and a quarter ounces, I extracted, by a modification of Stas's process, an alkaloidal substance, which weighed only one milligramme ($\frac{1}{65}$ grain). About two-thirds of this, when injected beneath the skin of the back of a young white cat, caused its death within four and a quarter hours.

"No characteristic pathogenic forms of bacteria were discovered in the sardines. A piece of one of the sardines which when eaten had caused the death of two mice, was macerated, whilst swarming with ordinary bacteria, in sterilized (by heat) water and placed beneath incisions in the backs of two guinea-pigs, but the animals were unaffected.

"These experiments point to poisoning by a toxic ptomaine, and not to the direct action of pathogenic bacteria on the animal organism."

An alkaloidal extract obtained from the stomach contents and another from the vomit proved rapidly fatal to animals. The symptoms exhibited by all the animals were similar—great feebleness, loss of muscular power, and retching.

"These experiments again appear to show that the stomach and ejecta of the deceased man contained a virulently poisonous ptomaine, similar in character to that contained in the sardines.

"A fragment of the putrid liver, swarming with bacterial life, but in which no characteristic pathogenic forms could be detected, was macerated in water previously sterilized by heat, and some of the macerated fluid was inoculated beneath the skin of the flanks of three guinea-pigs. All died within twenty-four hours. Two of the animals exhibited no particular post-mortem appearances. The third had much œdema about the site of inoculation, there was fluid in the peritoneal cavity, the spleen was enlarged and much congested, and the intestines were emphysematous. The œdematous fluid from the site of inoculation, the peritoneal fluid, and the spleen juice all abounded in bacilli similar in appearance to those of malignant œdema. Some were single rods, but many were prolonged into long jointed threads. No spores were seen.

"That a ptomaine and not the direct action of bacteria was the cause of the death of W. H. seems to me clear from the above experiments. Nevertheless, the facts that there was œdema of the thigh of the deceased man, and that his liver was capable of producing malignant œdema in a guinea-pig, are curious. I incline to the opinion that the ptomaine was generated before the tinning of the sardines."—*British Med. Journal*, 1892, No. 1668.

Affections of the Testicle in Hereditary Syphilis.

Dr. George Carpenter contributes a thoughtful paper on this subject to the *Practitioner*, 1892, No. 291. The bibliography is reviewed and eighteen cases are described. The author arrives at the following conclusions:

1. The testicles may be affected so slightly that it needs the microscope to detect the malady.

2. In a certain small percentage of cases of congenital syphilis the lesions of the testicles are such that they can be detected by physical examination.

These lesions may be present at birth, arise soon after, or appear only some months or years later. The general rule seems to be from birth up to two or three years, not often much after, and very rarely indeed at puberty.

3. The globe is, more often than not, alone affected, but not infrequently the globe and epididymis suffer together, and quite exceptionally the epididymis is attacked singly. It appears that the cord may suffer. The vas, vesiculæ seminales, and prostate are not attacked; at least so far there has been no record of such a complication.

4. The disease is very frequently, but not invariably, bilateral in its distribution, though one side may be more advanced in pathological changes than the other.

5. Hydrocele of the tunica vaginalis is not such an infrequent accompaniment of the malady as some writers would have us believe, and it may be, in young infants, the earliest indication that there is something wrong with the testicles. In all probability, as time goes on, the fluid is reabsorbed, and then the condition of the gland itself becomes more marked.

6. There is just a possibility that hydrocele of the cord may, in some instances, owe its origin to congenital syphilis.

7. The swelling of the testicle is a painless one; it feels like scirrhus; it may, or may not, be nodular, the latter for the most part, and a fungus testis is sometimes seen.

8. The enlargement of the affected organ is usually not great, and, in fact, there may be none at all, it being a very rare occurrence indeed to find in infants and children a testicle the size of an egg.

9. In the large majority of instances the microscopical appearance is that of the simple inflammatory form, passing on to the development of fibrous tissue with consequent destruction of the gland.

Erysipelas of the Bladder.

Fritsch (*Internationale klin. Rundschau*, 1892, No. 44, p. 1785) has reported the case of a man, fifty-two years old, who, twenty years previously, had had gonorrhœa, followed by acute prostatitis, with suppuration and rupture into the bladder, and thereafter recurrent attacks of prostatitis. In the intervals between the attacks the patient was in fairly good health. On one occasion he was suddenly seized with a rigor and vomiting and elevation of temperature, followed, a day later, by a sense of pressure in the perineum, increased frequency of micturition and vesical burning. In a short time the subjective symptoms subsided, although the urine was turbid and deposited a sediment of pus; but after two days a second chill occurred, with a repetition of the previous symptoms. An intermission again took place, followed after a few days by elevation of temperature, vomiting, and chilliness; the tongue became heavily coated; the prostate gland was rapidly enlarged and tender; the bladder was irritable, and micturition was burning. On the following day the patient became soporous; headache was marked; there was pain in the splenic region; there was cough, with fine moist râles. The urine was acid, with a specific gravity of 1023, and contained albumin, as well as pus-corpuscles, pavement epithelial cells, and streptococci. A day or two days later an area of redness appeared on the anterior surface of the left leg;

a smaller area appeared over the tubercle of the tibia. These areas increased in size and soon coalesced. On cystoscopic examination the mucous membrane of the bladder was found to be intensely reddened, in places cyanotic, and raised in folds. The redness of the skin extended, and successively involved the right lower extremity, the buttocks, the back, then the anterior aspect of the trunk, the face, and the head. Examination of the urine and of some secretion that could be expressed from the urethra disclosed the presence of streptococci; cultures of these fluids developed the same organism, which, injected subcutaneously into lower animals, gave rise to the manifestations of erysipelas, while injection into the bladder was followed by the development of purulent cystitis.

Bacillus Aerogenes Capsulatus, Nov. Spec.

Welch and Nuttall (*Bulletin of the Johns Hopkins Hospital*, vol. iii., No. 24, p. 81) have reported the case of a mulatto, thirty-eight years old, with a history of syphilis and of alcoholic excess, who presented the symptoms of aneurism of the ascending aorta. The sternum became eroded and the summit of the swelling that had formed ulcerated in two places, repeated hemorrhages occurring, the patient, however, dying suddenly without further loss of blood.

The autopsy was held eight hours after death, the weather being cool. The body was still warm and presented no discoloration of the skin of the abdomen or other sign of decomposition. The subcutaneous veins over the abdomen and thorax, especially on the right side, were distended and tortuous and contained gas-bubbles. Emphysematous crackling was detected in the course of the superficial veins over the greater part of the body and extremities, as well as upon the lower portion of the neck up to the level of the thyroid cartilage, extending on the right side posteriorly to the vertebræ, on the left most evident anteriorly and laterally, in both axillæ, on the inner side of the arms, over the pectoral muscles, over the buttocks, in the groins, and the inner side of the thighs. Before the usual incisions were made into the abdomen and thorax a number of veins and arteries, including the jugular, femoral, and brachial veins, some superficial veins of the abdominal wall, the femoral and temporal arteries, were carefully exposed by suitable incisions through the skin covering them, and the presence of gas-bubbles determined without opening the vessels. The presence of gas in the subcutaneous connective tissue was also determined by incision. The gas burned with a pale-bluish, almost colorless flame, a slight explosive sound being heard at the moment of ignition.

The peritoneal cavity was dry and not distended with gas. The visceral and parietal peritoneum, including the omentum, was studded with small, gray, translucent tubercles. The pleural cavities were obliterated by adhesions. The pericardial sac contained 30 cc. of thin, blood-stained serum containing gas-bubbles. The cardiac veins and arteries contained gas-bubbles. The various cavities of the heart contained soft, dark-red coagula and thin, lac-colored blood, with which were mingled gas-bubbles in large number. The pulmonary artery and veins contained gas-bubbles. The muscular wall of the heart was soft and flabby, and on section presented a peculiar, spotted

appearance. There were numerous small cavities throughout the myocardium containing gas. Immediately around these cavities the muscular tissue was pale-whitish in appearance. The endocardium was diffusely blood-stained. The ascending arch of the aorta was much dilated; its wall was thickened, its inner surface diffusely blood-stained and presenting many firm, partly-calcified and atheromatous patches. Nearly two inches above the aortic valves was a sacculated aneurism, filled with coagula and presenting two ulcerated openings on its superficial aspect.

The lungs were hyperæmic, œdematous, pigmented; the upper lobes contained old cavities with fibrous and caseous contents, dense interlacing fibrous tissue, a few caseous nodules, and many small, firm, gray, miliary tubules, without fresh pneumonia. The surface of the spleen was studded with miliary tubercles; the parenchyma presented a few grayish tubercles; it was soft, brownish-red; on pressure a large number of gas-bubbles escaped. A few small, grayish-yellow tubercles were visible on the surface of the kidneys and on section. Gas-bubbles escaped from the bloodvessels on section and on pressure. The vessels in the pelvis were diffusely red from imbibition. The lower third of the ileum contained scattered fresh tuberculous ulcers. The mesenteric glands were pale and swollen, and contained a few tubercles. The liver presented emphysematous crackling on pressure. Its surface and cut section presented a peculiar, mottled appearance, from the presence of many little, round, gas-containing cavities. Gas-bubbles were present in large numbers in the vessels of the liver.

The aorta was atheromatous throughout. The large and small arteries likewise presented scattered patches of atheroma. The intima of all the large arteries and veins was diffusely red, from imbibition of blood-coloring matter. The blood was thin, watery, transparent, and lac-colored, and everywhere contained gas-bubbles. It presented no distinct odor, and the body no putrefactive odor or greenish discoloration. The blood, taken with care from the interior of veins and arteries immediately after opening them, showed fewer and paler red blood-corpuscles than normal. Many of the red cells were irregular in shape and there were shadows of corpuscles. The colorless corpuscles were swollen and their granules often in molecular movement. The blood from the heart was rich in bacilli, from about 3 to 5 μ long, about as thick as anthrax-bacilli, with slightly rounded extremities, sometimes almost square-cut, occurring chiefly in pairs and in irregular masses, and not in long chains. The same kind of bacilli were present in large number in cover-slip preparations from the laminated clot of the aneurism, the liver, the spleen, and the kidney. In all situations the bacilli appeared in pure culture. They were not motile. They stained readily with the usual aniline dyes, but often presented small unstained spots. They possessed a capsule, evident in the stained specimens. Bacilli were found in sections of liver, myocardium, and kidney. They were most abundantly present in the large arteries and veins. The pericardial lymphatics were injected with masses of bacilli. On cultivation the organism proved to be anaërobic and gas-producing. It has not proven pathogenic to healthy rabbits under ordinary conditions. The conclusion is reached that the organisms in question gained entrance by the opening in the aneurism, finding lodgment in the laminated clot and giving rise to the formation of gas, the circulation of which brought about sudden death.

SURGERY.

UNDER THE CHARGE OF

J. WILLIAM WHITE, M.D.,

PROFESSOR OF CLINICAL SURGERY IN THE UNIVERSITY OF PENNSYLVANIA; SURGEON TO THE UNIVERSITY AND GERMAN HOSPITALS;

ASSISTED BY

ALFRED C. WOOD, M.D., INSTRUCTOR IN CLINICAL SURGERY, UNIVERSITY OF PENNSYLVANIA; ASSISTANT SURGEON, UNIVERSITY HOSPITAL.

AND

C. L. LEONARD, M.D., ASSISTANT INSTRUCTOR IN CLINICAL SURGERY IN THE UNIVERSITY OF PENNSYLVANIA.

THE REMOVAL OF CEREBRAL TUMORS.

BRAMANN (*La Sem. Méd.*, 12e année, No. 31) reports the following interesting cases of brain surgery:

Case I. Male, aged forty-six years; had paralysis of the left hand and of the muscles of the face on the same side, and finally involvement of entire upper and lower extremities on the left side and the rotation of the head away from that side. These symptoms, with the absence of fever or traumatic history, led to the diagnosis of a cerebral tumor in the region of the right Rolandic fissure. The operation showed a cyst containing thirty-five grammes of yellowish fluid; after its removal there was decided amelioration of symptoms. Three weeks after, convulsive attacks indicated further operation, when an ill-defined tumor was removed through the same opening; the symptoms were for a time relieved, but a third operation became necessary, and a neoplasm weighing ninety grammes was removed. After this there was complete relief and recovery, with no return of symptoms.

Case II. Male, aged twenty-nine years; had headache, paralysis of left arm, difficulty in phonation and deglutition, finally diplopia with diminished acuteness of vision, but without vomiting. A large opening was made in the fronto-parietal region on the right side, and a tumor the size of an apple was removed; the wound was tamponed on account of profuse hemorrhage; there was collapse, with loss of consciousness for three days. On the fifth day, when the tampon was removed, the wound was cicatrized and the osteo-cutaneous flap was firmly adherent. Paralysis of the left arm remained, but no other symptom.

RESECTION OF THE CÆCUM FOR TUBERCULOSIS.

AN interesting case of successful removal of the entire cæcum and a portion of the ileum is reported by SACHS (*Arch. für klin. Chir.*, Band cxl., Heft 2). The patient was forty-one years of age and had no signs of tubercular disease, and not until a microscopical examination of the tumor had been made could the pathological condition be diagnosticated. There was considerable thickening of the walls of the cæcum, causing stenosis, but no great increase in the bulk of the intestine. After opening the abdominal cavity

over the tumor, it was brought out of the wound, the intestine on either side cut between long-jawed artery forceps, and the mesentery ligated and cut away. The ileum was united to the ascending colon by Lembert-Czerny sutures, and a second layer of interrupted sutures was placed in the serous surfaces. The colon and intestine were united, as is customary in the case of the stomach in resections of the pylorus. The abdominal wound was closed without drainage, the wound being covered by a collodion film; primary union was obtained. The case progressed without fever until the third day, when slight fever was noted; and a hydro-nephrosis which had been present before the operation, but relieved by it, was found to have returned. This the author supposes was due to the obstruction of the ureter by products arising from an inflammation in the pelvis of the kidney, the cause of which being unknown—for although pus was found in the urine, there was no cystitis present and no trace of tubercule bacilli could be found in the urinary sediment. The hydro-nephrosis disappeared and the patient made a good recovery, leaving the hospital thirteen days after operation, in good condition, though the emaciation still persisted. The author is a strong advocate of the Lembert-Czerny suture in these operations, believing it applicable in more cases than either the bone plates of Senn or the submucous resections of Kummer, although these have their advantages and are more useful in certain cases.

Hypertrophy of the Mammæ.

Schüssler (*Arch. für klin. Chir.*, Band cxl., Heft 2) reports two cases of hypertrophy of the mammæ; in one case the breasts were removed. He believes that many cases have been falsely reported as hypertrophy, which were in reality only other forms of tumors occurring in the breasts. The term hypertrophy, and the only one to which he thinks this name should be applied, is that in which only the normal histological elements are present, and in which the increase in size is solely due to their exuberant growth. And these were the microscopical conditions he found present in the cases operated upon.

The clinical history was as follows: These enlargements make their appearance at the time of the first menstruation, and more seldom at the first pregnancy. They appear usually in one breast, followed in six months' time by the appearance in the other. The first symptom, so far as noted, is the hardening of the breasts, these becoming fixed to the chest, and non-pendulous. The skin is unaltered, except stretched by their increased size. The mamillæ are unaltered. Secretions of cholesterin and milk are only observed when coincident with pregnancy. The prognosis is not unfavorable, but early amputation is desirable, as abscess and gangrene may complicate the disease, though patients have died from intercurrent disease after carrying these tumors eighteen years.

A Review of 1793 Cases of Anæsthesia.

Wachholtz (*Arch. für klin. Chir.*, Band cxl., Heft 2) draws the following conclusions from 1793 cases of anæsthesia, of which 1684 were by chloroform, 45 by mixed narcosis of chloroform and ether, 43 by chloroform and

cocaine, 20 by chloroform, ether, and cocaine, and 1 by chloroform and morphine. The average amount of chloroform required for complete anæsthesia, as shown by loss of conjunctival reflex, was 10.6 grammes, and the average time required 9.1 minutes, and an average amount of 17.6 grammes was required for the average duration of narcosis—34.3 minutes. Disease, especially sarcoma, of the larynx, was the most obstinate in yielding to the first stage, and required the most chloroform before the anæsthesia was complete. With hard drinkers the well-known obstinacy and excitability were observed before yielding to the anæsthetic. It was also remarked that each succeeding narcosis in the same individual required more time and more chloroform to produce complete ansæsthesia. Anæmic patients required more than the plethoric. The nature of the disease affected the amount required, the malignant growths requiring considerably more. Ether was used in all cases where heart complications were found, or the patient was anæmic or cachectic; but was used in mixed narcosis, chloroform being used to produce the primary stage. Cocaine was used in subcutaneous injections, after the first stage had been passed in the chloroform narcosis, and the results showed that less chloroform was required during the remainder of the operation than in simple chloroform anæsthesia, and it seemingly prevented post-operative vomiting. Of these 1793 cases, 1065 were males, 728 females, but sex had little or nothing to do with either the length of time or amount of the anæsthetic required. Asphyxia most frequently occurred through irritation in the first stage of anæsthesia, falling back of the tongue and the stoppage of the larynx by vomited matter being other causes.

Two cases of death occurred: one, a case of cancer of the rectum in the first stage, while a rectal speculum was being introduced; "the patient turned pale and stopped breathing." The second death occurred during the after-dressing, from a cause not fully understood. Fifteen per cent. of cases vomited; choking was noted in three per cent. One case died during the operation for a strangulated hernia, a regurgitated fecal mass lodging in the larynx. The greatest danger to a patient, the author believes, is in too concentrated chloroform vapor.

The Operative Treatment of Genu Valgum.

Regnier (*Arch. für klin. Chir.*, Band cxl., Heft 2) in discussing these operations, divides the cases into two classes: The first, in which the deformity is due to a curvature in the tibia; the second, in which the curvature is in the femur. For the first class he advises the division of the tibia by any of the subcutaneous methods, but in the division of the fibula recommends the following modifications, on anatomical grounds, with the view of avoiding the too frequent laming of the peroneal nerve either during the operation or by the bone-ends, or by exuberant growths of callus and the consequent atrophy of the group of muscles supplied by it. With the leg flexed upon the thigh, the head of the fibula should be found and a perpendicular incision, three-quarters of an inch in length, carried downward; this will just avoid the branching peroneal that lies immediately below. Then the bone should be divided in a plane from above downward and from without inward, to avoid the danger of compressing the nerve between the bone-ends. The leg

should be dressed in a plaster-of-Paris dressing for from eight to ten days, and then elastic bandages applied to bring it into correct position. The second class should be treated by Macewen's supra-condyloid division of the femur, and to the description of this method, with seventeen cases, he devotes the remainder of his article.

THE OPERATIVE TREATMENT OF OLD LUXATIONS OF THE ELBOW-JOINT.

SSOKOLOW (*St. Petersburger med. Woch.*, Jahr. xvii., No. 11), in speaking of the treatment of these cases says: It is better by forcible manipulation under anæsthetics, even with the rupturing or cutting of the triceps tendon, to secure an angle of motion of 20 to 25 degrees without operation, than to subject the patient to an operation which will deprive him of the use of his arm for four or five months, and he quotes Ollier as saying that "the section of all structures holding the joint in an abnormal position and the return of the articular surfaces to their normal position is far preferable, when possible, to a resection." In operating, he believes there should be no fixed line of incision, but that such incisions should be made as will give perfect access to the joint. He objects to the Langenbeck incision, because of the difficulty experienced in closing the wound when the joint is flexed. He himself prefers to open the joint posteriorly, chiselling away the attachment of the triceps tendon and replacing it after the "toilet" of the joint. In the four cases he reports there was no great difficulty in replacing the joints after the surrounding connective tissue and inflammatory growths had been removed, but it was necessary, on account of the displacement produced by the contracted muscles and tissues, in some cases to hold the articular surfaces in position by a temporary suture, which was easily removed afterward by scissors passed down the ends of the suture, which had been brought out through the wound. The difficulty in motion found after operation was removed by forced movements under an anæsthetic and by passive motion persistently carried on by the patient.

A CASE OF RECURRENT APPENDICITIS; OPERATION; RECOVERY.

MUNRO (*Boston Med. and Surg. Journ.*, vol. cxxvi., No. 26) reports a case of recurrent appendicitis in a patient seventeen years of age; the attacks lasted over a period of nearly two years. At the operation very little inflammation was found, the appendix appeared to be normal, but it was ligated and removed, the stump being sewn. The patient made a good recovery, and for one year has had unimpaired health. A microscopical examination of the appendix showed no pathological change.

THE PATHOLOGY OF CALLOUS TUMORS.

The following contribution to the literature on this subject is made by HABERERN (*Arch. für klin. Chir.*, Band cxl., Heft 2), in reporting a case of chondro-sarcoma occurring in the ensheathing callus of a fracture of the lower third of the humerus. The history showed that the tumor began to grow after the fracture, and the microscopical examination demonstrated its origin to have been in the chondroid substance of the ensheathing callus.

After a careful historical study of the cases and literature on this subject, from a pathological standpoint, he concludes that in his case the tumor originated in the unossified residues of callous substance remaining in the ensheathing callus, and owing their origin or absence of ossification to the deficient vascularization of the ensheathing cartilage. These remaining unossified portions of the cartilage he believes formed the matrix for an exuberant growth of cartilage, and that the enchondroma was the result of this growth and that its degeneration produced the chondro-sarcoma.

The Diagnosis of Tubercular Cystitis.

Duplay (*La Sem. Méd.*, 1892, No. 26), in discussing this disease, says that, of varieties in which there is tubercular involvement of other organs, genital or pulmonary, the diagnosis is not difficult; but in cases where no such lesions exist the diagnosis should be made by the frequent bloody micturition appearing at any time, and not after exercise and jarring, as in stone. This is the symptom of the first stage. Pain radiating through the genito-urinary organs is the symptom of the second; it is intense both at the beginning and end of micturition, but may be absent altogether between these times. In the third stage the hæmaturia disappears, but the urine becomes muco-purulent and turbid. Manual examination may elicit tenderness at the base of the bladder, and pressure a dull pain in the glans penis. Microscopical examination confirms the diagnosis only. The prognosis is unfavorable, death usually ensuing from an ascending pyelo-nephritis. General tubercular therapy is the only one he believes in, unless severe pain justifies supra-pubic cystotomy, curetting, and cauterizing by the thermo-cautery; this may destroy the vesical trouble and alleviate the pain.

Sub-pubic Luxation of Left Femur; Resection; Recovery.

Villeneuve (*Rev. d'Orthop.*, 1892, No. 3) reports a case of luxation of the head of the femur under the pubic arch, seen fifty-two days after the accident, that was found to be irreducible, even under anæsthetics. Operation was decided upon, but after considerable effort it was found to be impossible to reduce the dislocation without endangering the life of the patient by a protracted operation, and as the condition of the acetabulum was unknown it was decided to perform an osteotomy. The great trochanter was divided at its lower third which allowed the limb to be easily reduced to its normal position. The patient made a speedy recovery, with only one and a half inches of shortening, and a perfectly useful limb. The author believes that the results obtained are worthy of notice and are far preferable to a tedious operation, especially where the condition of the acetabulum is hypothetical.

Occasional Deceptive Nature of the Symptoms of Strangulated Hernia.

Mr. Bennett (*Lancet*, No. 3564) illustrates admirably this subject by the following three cases:

Case I. Strangulated omental hernia, in which there was no interference

with the action of the bowels; herniotomy; commencing gangrene of contents of sac; radical cure; recovery.

Case II. Painful tumor over the saphenous opening; diarrhœa; exploratory operation; strangulated hernia of vermiform appendix, which was gangrenous; removal of the appendix; recovery.

He draws particular attention to the fact that in both of these cases, although there was sufficient strangulation to produce gangrene, yet constipation and vomiting were absent, and in one case diarrhœa was present. There were present in both cases recent increase in size and tension of a painful tumor, yet in each case only a single symptom was conclusive. In Case I. the entire absence of hernial impulse, which he very rightly defines as *expansile* in non-strangulated herniæ, and not simple mobility of the hernia upon coughing; mobility may be present where strangulation exists, as in the first case, but expansile "impulse on coughing" cannot be. And he holds that every case in which any change has taken place in the tumor, such as increase in size or tension, whilst expansile impulse is absent, should be regarded as strangulated. In Case II. the sole diagnostic symptom was the existence of putrefactive crackling in the tumor, which could only be present with a gangrenous condition.

Case III. Symptoms of strangulated femoral hernia, with acute intestinal obstruction, caused by glandular abscess in the crural canal; operation; immediate and complete relief.

This patient had always been in good health until six months before operation, when she noticed a "lump" in the right groin that varied in size, never entirely disappearing, sometimes swelling and being painful after a hard day's work. Three days before admission the swelling, without any known cause, became rapidly larger; pain, tenderness, and constipation followed, and almost immediately vomiting, recurring frequently and copious and semi-stercoraceous in character; the pain was apparently characteristic, extending over the lower part of the abdomen and constantly dragging upon the umbilicus; nevertheless, the operation showed it to be an abscess, with a distinct caput filling the crural canal, while the septum crurale was found intact, proving that no hernia had ever existed.

Complete relief followed the operation, showing that the symptoms were dependent upon the abscess and only to be accounted for by referring them to reflex nervous irritation. And yet the awkward fact remains that symptoms identical with those taught to be characteristic of a certain condition were present, while the condition was not.

External Œsophagotomy.

Meyer (*N. Y. Med. Journ.*, November 19, 1892) reports an unsuccessful case of œsophagotomy, combining both the external and internal operation, death ensuing from septic emboli. He believes that these operations can be performed under antiseptic conditions. He would perform first a gastro-enterostomy and an external œsophagotomy; clean the œsophagus by an antiseptic solution; tampon the cardiac orifice to prevent infection by regurgitation; and by placing a tampon in the superior portion, prevent infection from the mouth. Through the external œsophagotomy wound the internal

operation could then be performed in a similar manner to internal urethrotomy. The cutting should be retrograde, if possible, the instrument being first passed through the stricture from above. Bougies should be passed by the wound in the neck frequently and the patient fed by rectal alimentation, and directly into the stomach, until bougies can be passed by the mouth and the wounds allowed to heal. In all cases of ulceration of the œsophagus, sounds should be passed after the fourth or fifth week, and a continuance through life may be necessary. External œsophagotomy often makes it possible to pass a stricture that was impossible from the mouth, and a gastro-enterostomy will often allow the passage of a sound upward that could not pass the stricture in any other way; and by means of a continuous silk thread remaining constantly in the œsophagus, and passing out at the mouth and the wound in the stomach; gradual dilatation by means of bougies passed over it can be accomplished.

OTOLOGY.

UNDER THE CHARGE OF

CHARLES H. BURNETT, A.M., M.D.,
AURAL SURGEON, PRESBYTERIAN HOSPITAL, ETC., PHILADELPHIA.

Remarkable Improvement in Hearing by Removal of the Stapes.

Dr. Frederick L. Jack, of Boston, presented an important paper with the above-named title, at the meeting of the American Otological Society, 1892.

Referring to the investigations and operations of Kessel, of Jena (1875); Schwartze, of Halle (1885); and of Sexton, of New York (1886), respecting removal of the membrana tympani, the malleus, and the incus for the relief of chronic otitis media suppurativa, and chronic catarrhal otitis media, and finally to the investigations of Botey, of Barcelona (1891), regarding the removal of the stapes in birds and in man, he proceeds to describe his own operations for the removal of the stapes for the relief of deafness in both chronic otitis media suppurativa and in chronic otitis media catarrhalis, undertaken with the aid of Dr. W. T. Bryant. Then follows a list of sixteen cases, three actively purulent, in which all the ossicles or their remnants, including the membrana tympani, were removed, and thirteen non-purulent or chronic catarrhal ones, in which only the stapes was removed. In one of these latter cases the incus fell from its situation after detachment from the stapes. There was very marked improvement in hearing in all. In one of the cases of chronic catarrhal otitis media the improvement in hearing following the removal of the stapes was so great as to induce the patient to return in three months and request the performance of the operation in the other ear, also deaf from chronic non-suppurative catarrh. The operation was

performed in the other ear, as requested, and here, too, marked improvement in hearing followed the operation.

Dr. Jack says: "Not only is the simple removal of the stapes much better in its results than the removal of the two large bonelets only, as shown by the operations already performed, but on the ground of conservative surgery, it is also much to be preferred. It produces greater improvement in the hearing, and, according to my experience up to the present, there has been no inflammatory reaction whatever, or any other bad results."

Two Cases of Pyæmia following Suppuration of the Middle Ear, Treated by Ligature of the Internal Jugular Vein and Cleaning Out the Lateral Sinus, with Complete Success in One of the Cases.

Mr. Rushton Parker, of Liverpool, England, has performed the above-named operation in two cases, one a man twenty-five years old, and the other a boy seven years old. Both were subjects of chronic purulent otitis media. In the first case—that of the man—there was double optic neuritis, more on the right than the left side, the latter being the side of the diseased ear. There was no swelling or tenderness of the mastoid, but there were swelling and tenderness of the neck just below. Fever, vomiting, and rigors, in addition to the above-named symptoms, seemed to indicate that plugging of the jugular vein, following that of the lateral sinus, had occurred. On the eleventh day of the illness, the symptoms continuing unabated and the swelling and tenderness of the neck having increased, an incision seven or eight inches long was made down to the jugular vein, exposing also the mastoid region. The vein was found firmly plugged from the base of the skull to below the junction with the facial trunk, which also was plugged for an inch or so. Both veins were cut between two ligatures in their healthy parts, and their plugged portions detached from the bed. The mastoid region was laid bare, revealing the interior of the lateral sinus, occupied by green purulent lymph and the end of a purple blood-clot, thickening downward. The sinus was partly scraped, and upon probing upward it bled freely, but was quickly stopped with a plug of antiseptic wax. The lower half of the wound was stitched and healed by first intention. The upper half was plugged with cyanide gauze, after washing with a perchloride of mercury solution. Symptoms improved for two days, when the temperature rose again to over 103°. The patient was again chloroformed, and the wax plug removed from the lateral sinus. Fetid pus was found behind the plug. The symptoms improved once more, but upon ceasing frequent dressings the temperature rose again, even reaching 105° on two days. In two weeks after the second operation the patient left his bed and has remained well ever since; the mastoid opening was kept open for three months.

In the second case, that of a boy seven years old, the lateral sinus was exposed, but was found apparently healthy. The temperature fell from 106° to 100°. Fever returning, the jugular vein was tied and laid open. It was found to contain a thick lining of putrid lymph, enclosing liquid pus. All the parts exposed became sweet and healthy, but the lad died three days later of meningitis.

Chronic Suppuration of the Middle Ear, complicated with Abscess of the Neck; Death.

Dr. E. Oliver Belt, of Washington, D. C., has given an account of a case of chronic purulency of the ear following grippe, in a man fifty-three years old, who had been addicted to excessive drinking. Six weeks after the beginning of the otorrhœa there were tenderness and swelling about the mastoid region and in the neck below the auricle. These symptoms improved a little under antisepsis of the ear and iodine on the mastoid. However, in ten days the swelling in the neck increased, and was poulticed. The patient grew weak and dull; pulse 100, temperature A.M. 97°, P.M. 98°. Deep fluctuation now being felt under the sterno-cleido-mastoid muscle, it was decided to make an incision to liberate the pus. Operation was made without anæsthesia, excepting a few injections of cocaine over the mastoid and the abscess in the neck. Incision through the sterno-cleido-mastoid muscle and deep fascia gave vent to a large quantity of pus. The mastoid was opened, too, but no periostitis or pus in the cells was found. Pus seemed to enter the abscess cavity directly from under the auricle. A few hours later patient was found in semi-conscious state. The patient then sank gradually into a comatose state, and died quietly twelve hours after the operation without any evidence of meningitis, hemorrhage, thrombosis, or septicæmia. The cause of death was supposed to be exhaustion.—*Ophthalmic Record*, 1892.

Treatment of "Attic" Suppuration by Excision of the Membrana Tympani and Auditory Ossicles.

Mr. Milligan, of Manchester, England, has carried out the above-named treatment in suitable cases with excellent results. "In considering the advisability of removing diseased ossicles it must be borne in mind that anything which tends to keep up suppuration from the ear is a source of danger not only to the hearing but also to the life of the patient. Absorption of putrid pus may take place into the systemic circulation and set up general pyæmic symptoms, or the formation of localized abscesses in the cerebrum, the cerebellum, or the lungs. It becomes, I think, the duty of the surgeon to free the patient from this possible source of danger regardless, one might almost say, of the effect the operation may have upon the hearing power. . . . . The results of the operation, however, show that the hearing power may improve in a remarkable way in many cases. In Ludewig's analysis of 32 cases, the hearing power was decidedly improved in 16, remained as before in 9, and was impaired in 3 cases; 4 cases did not undergo a reëxamination." In Mr. Milligan's four cases there was improvement in hearing in all; markedly so in one of them, the hearing becoming very nearly normal even after entire regeneration of the membrana had ensued.—*Lancet*, London, 1892.

Clinical Observations on the Effects of Quinine in Acute Inflammations of the Ear.

Dr. H. N. Spencer, of St. Louis, Mo., in a paper with the above-named title, sets forth the gravity of administering quinine in cases where the ear

is already affected, and his experiments also show that some subjects are very sensitive, in their ears, to the ingestion of this drug: He says, "Many instances have come under my personal observation in which a suppurative attack has been much intensified by its (quinine) employment, and where a chronic inflammation has been induced by the exciting influence, which, under more favorable circumstances, might have been readily arrested." He further urges that great care, in fact more care, be exercised in the use of this drug in subjects affected with subacute and chronic inflammations of the ear. In conclusion, Dr. Spencer propounds "a question which is very pertinent," in view of the recent widespread epidemic of la grippe: "May not the frequent ear-complication in la grippe be due, at least in some measure, to the quinine treatment of this disease which is so much in vogue?"—*Medical Fortnightly*, 1892.

A New Method of Making a Differential Diagnosis between Labyrinthine and Middle-ear Disease.

Dr. Ludwig Jankan, of Zurich, presents in a preliminary communication the following means of determining whether the labyrinth or the middle ear is the seat of disease in some cases of deafness: In an observation of the phenomena in 104 cases of ear-disease, 68 of which were affected in the sound-conducting apparatus, and 36 in the sound-perceiving organ, he discovered that in the cases of disease of the conducting apparatus, sound was conducted to his ear by means of a form of stethoscope connected with the patient's ear more loudly through the more affected ear of the patient. He also found that in patients affected with disease of the sound-perceiving organ, sound was conducted to his ear more loudly from the less affected ear of the patient.—*Deutsche medicinische Wochenschrift*, 1892.

DERMATOLOGY.

UNDER THE CHARGE OF

LOUIS A. DUHRING, M.D.,

PROFESSOR OF DERMATOLOGY IN THE UNIVERSITY OF PENNSYLVANIA.

Pityriasis Rubra Pilaris.

Galewski, of Dresden (*Brit. Journ. of Derm.*, September, 1892), considers this disease, which has been the subject of so much discussion recently, and concludes that: 1. The lichen ruber of Robinson and Taylor is the same as pityriasis rubra pilaris of Devergie, Richaud, and Besnier, and this disease includes the benign forms of lichen ruber acuminatus (Kaposi). 2. Pityriasis rubra pilaris is an exfoliative hyper-keratosis, and must be carefully distinguished from lichen planus (Wilson). 3. The typical lichen ruber acuminatus (Hebra, Kaposi) is a disease *sui generis*. 4. That in any doubtful

case arsenic should be administered, and that the best local treatment is the application of salicylic acid ointment after prolonged baths, and chrysarobin ointment at intervals.

Some Dangers of Contagion to which Physicians are Exposed.

Prof. J. C. White (*Boston Med. and Surg. Journ.*, February, 1892) directs attention to the numerous sources of contagion with which the medical man is liable to meet, more particularly lice, fleas, bed-bugs, tinea favosa, tinea tonsurans, malignant pustule, glanders, diphtheria, gonorrhœa, erysipelas, and rarely actinomycosis. Of more interest is the danger arising from leprosy, tuberculosis in its varied forms, and syphilis. Proper washing of the hands and the disinfection of suspicious wounds should be taught and studiously practised by physicians and nurses.

Treatment of Alopecia by Iodized Collodion.

E. Chatelain, of Paris (*Brit. Journ. of Derm.*, July, 1892), gives thirty-four cases, arranged in three series, his paper consisting mainly of an account of the third series, on which alone he wishes to base his claims for the efficiency of the remedy. He is a firm believer in the microbic origin of the disease. The treatment consists in the periodic application of iodized collodion (0 : 31) to the patches, and of some antiseptic to the rest of the scalp as a prophylactic. The remedy provokes a sensation of burning, smarting, or itching, which soon passes off. The collodion pellicle separates spontaneously in a few days; if removed forcibly it epilates the patch. The average duration of treatment was fifty-four days, the application being made every four or five days.

Pediculi Pubis upon the Scalp.

I. Heisler (*Archiv für Derm. u. Syph.*, 1892, Heft 4) describes a case occurring in Róna's clinic, Buda-Pesth, where this parasite was found upon the scalp, eyelashes, and eyebrows of a child with light hair, aged fourteen months. Scratching had been noted for two months before the cause was discovered.

Does a Vesicular Form of Lichen Ruber Exist?

Magnus Möller, of Stockholm (*Nordiskt med. Arkiv*, 1892, Bd. ii., Heft 3), discusses the different varieties of lichen ruber, as the acuminatus, planus, obtusus, corné, moniliformis, sclerosus, etc., and states that vesicles have been described in eight cases in literature (Unna, Róna, Cæsar Boeck, Kaposi), he himself also having observed one having a peculiar aspect. There was first noted a bright-red spot the size of a mustard-grain, not sharply defined, disappearing under pressure, and having no connection with the hair follicles. The following day the spot was larger, slightly infiltrated, raised, polygonal, non-umbilicated. Upon these little papules some very small, flat vesicles, analogous to those of miliaria, of a yellowish-white color, developed. In three or four days they dried up and formed dry, waxy scales, which detached themselves easily, leaving the epidermis dry. The disease improved under

arsenic, but some months later there was a relapse in the form of typical flat, glistening papules without vesicles or scales. Two years later recovery had occurred, but the dark pigmentation, so characteristic of lichen planus, remained. Möller considers that the diseases should be grouped with the polymorphous dermatoses.

Elastic Tissue of the Skin in Middle-aged and Elderly Persons.

Dr. E. Sederholm (*Nordiskt medicinskt Arkiv*, 1892, Bd. ii., Heft 3) gives an elaborate and complete article on this subject, with drawings. Allusion can only be made to some of the observations. In regard to the senile alterations of the elastic tissue, the author confirms the researches recently published by Schmidt (*Virchow's Archiv*, 1891, Bd. cxxv). He, moreover, confirms the following facts: The elastic network of the excretory duct of the sudoriparous glands becomes transformed into an elastic membrane, which may serve to explain, perhaps, the diminution in old persons of the secretion of the sweat glands. The smooth muscles attached to the fibrous sheath of the hair become inserted into the elastic network of the skin after the fall or atrophy of the hair. The amount of the elastic substance becomes increased in the interior and around the smooth muscles. The elastic sheath of the corpuscle of Meissner becomes more bulky and more solid. Around the central mass of the Pacinian body an elastic network formed of anastomosing circular fibres is met with, the first traces of which appear between the ages of forty and fifty.

Dermatol as a Local Remedy.

Werther (*Deut. med. Wochenschr.*, No. 25, 1892) employed dermatol as a dressing in wounds with defective epithelium, burns, chronic ulcers of the leg, and opened carbuncles and phlegmons. In no case did the remedy, used in powder form, cause any injury to the wound or to the surrounding skin, nor in any case did it call forth systemic toxic effects, even where the wound was covered with a thick layer of the substance. The most striking results were noted in burns of the second degree, in which, after removal of the epidermis, the remedy was used as a dusting-powder, healing taking place rapidly, more so than with iodoform, and having the advantage over the latter in not being liable to produce poisoning. Excellent results were also obtained in chronic leg ulcers.

Dermatol may, therefore, be recommended for its drying, astringent, and antiseptic properties, as well as for its being innocuous and free of odor.

Keratosis Follicularis.

Boeck (*Brit. Journ. of Derm.*, September, 1892) describes four cases of this disease, known also and described by Darier as "psorospermose folliculaire végétante." Three of the cases occurred in one family, the disease in the father beginning at the age of sixteen, and in the two sons at the ages of eleven and eight. Two of the cases were perseveringly treated without permanent benefit. The scalp, forehead, axillæ, groins, the lower part of the

abdomen, the spinal regions, and the backs of the hands and feet, were the regions especially affected. The general health was good. The microscopic examination shows, as Boeck maintains, that the disease is a hyperplasic one of the epidermis, with the premature and irregular keratosis of the cells, observed especially in the interpapillary processes of the epidermis and at the orifices of the hair follicles, but rarely around the openings of the sweat glands. Boeck considers particularly the large round cells described by Darier as coccidia, abundant in the altered epidermis, and believes that they are only epidermic cells which have undergone abnormal keratosis with hypertrophy, the nucleus being traceable in most of them. The same opinion is held concerning the smaller round or oval homogeneous bodies contained in the epidermic crusts, called by Darier "grains." The likeness between the supposed coccidia and the peculiar bodies found in molluscum contagiosum is illusory, the latter being manifestly within the cells, while the former are really not intra-cellular.

The affection much resembles some forms of warts, and may be regarded as allied more to verrucosis than to any other well-known disease.

Plasters in the Treatment of Skin Diseases.

Brocq (*Journ. of Cut. and Gen.-urin. Dis.*, July, 1892) considers the medicated plasters, which have been perfected by the well-known apothecaries of Paris, Vigier and Cavailles. The usual excipient used is lanolin and elastic gum dissolved in benzine. The diachylon plaster may also be employed as an excipient in many cases, and particularly in mercurial preparations, on condition that it has been recently prepared. The simple plaster of the French Codex, to which is added a little dextrine, may be used for oxide of zinc, employed to protect the skin from friction and traumatism. Cod-liver oil plasters are useful in the prurigo of Hebra, to which a little menthol or naphthol may be added. Those of salicylic acid, 5 to 10 per cent., especially combined with green soap or pyrogallol, are efficacious in the hyperkeratoses; the "red plaster" of Vidal, in ecthyma, impetigo, furuncles, suppurating folliculitis, and dry eczema; the phenicated plaster mixed with the biniodide, and the ichthyol and sulphur plasters in acne; resorcin, or resorcin and creasote, and salicylic acid and creasote plasters in lupus; oil of cade, pyrogallol and chrysarobin plasters in psoriasis; and chaulmoogra plasters in lepra.

Cure of Rodent Ulcer by Pyoktanin.

Dr. von Schlen, of Hanover (*Brit. Journ. of Derm.*, July, 1892), gives the case of a man, aged seventy, with an ulcerating tumor the size of a dime on the right cheek, which was hard and bossy and extended almost to the bone. The diagnosis of carcinoma was confirmed by the microscope. Resorcin plasters and powder had failed. Pyoktanin was applied pure to the sore, and also injected into it—this treatment being excessively painful at first. After five days the secretion considerably diminished and the tumor flattened. In a month the ulcer was much reduced, and the hardness had disappeared. At the date of presenting the patient to the Medical Society the lesion was reduced to a faintly colored stain with a slightly elevated border.

Thilanine in Eczema.

Saalfeld (*Therap. Monatshefte*, Nov. 1892) speaks well of this mildly stimulating remedy in some cases of eczema and in the superficial inflammations. It has the advantage of not producing irritation. It is obtained by the action of sulphur upon lanolin, contains three per cent. of sulphur, has a yellowish-brown color, and is of the consistence of lanolin.

Paget's Disease of Nipple Treated with Fuchsin.

Geo. J. Elliott (*Journ. of Cut. and Gen.-urin Dis.*, July, 1892) obtained favorable results with an ointment of fuchsin, three or four grains to the ounce of equal parts of lanolin and cold-cream ointment. It is not brought forward as a curative agent, but as a remedy which stays the progress of the disease, relieves the itching and soreness, aids cicatrization, and is useful where operative interference is not permissible.

Trichloracetic Acid in Skin and Genital Diseases.

A. Lanz (*Archiv für Derm. u. Syph.*, Heft 4, 1892) speaks highly of the value of this substance as an application in papillomata, warts, pigment spots, and in chronic and papillomatous urethritis. It is almost painless, and, using caution, does not scar appreciably.

OPHTHALMOLOGY.

UNDER THE CHARGE OF

GEORGE A. BERRY, M.B., F.R.C.S. Edin.,
OPHTHALMIC SURGEON, EDINBURGH ROYAL INFIRMARY;

AND

EDWARD JACKSON, A.M., M.D.,
PROFESSOR OF DISEASES OF THE EYE IN THE PHILADELPHIA POLYCLINIC; SURGEON TO WILLS EYE HOSPITAL, ETC.

Sarcoma of the Choroid.

Drs. Thomas Reid and A. Maitland Ramsay report (*Glasgow Med. Journ.*, vol. xxxviii., No. 3) unusual cases of sarcoma originating within the eye. Reid's two cases were both of them marked by degenerative changes in one part of the tumor, with the development of new-formed tissue in another portion. One of these cases had developed within a year, and the other was of six years' standing. The latter terminated with secondary growths in the abdomen, and death a few months after the enucleation of the globe. Ramsay's case was also of six years' duration, and the tumor had been evident outside the eyeball by the end of the second year. At the time of removal it

occupied the whole orbit, extending back into the optic foramen. The original growth within the eyeball, however, was found to be only the size of a millet-seed.

Treatment of Congenital Cataract.

M. Dor (*Revue générale d'Ophthalmologie*, tome xi., No. 5) classifies these cataracts as pyramidal, zonular, nuclear, total, and the unusual. In the great majority of pyramidal cataracts, vision is such that no treatment is required; yet in some an iridectomy for optical purposes may be indicated.

For zonular or lamellar cataract, when the opaque portion is not over 5 or 5½ mm., he does iridectomy, the sphincterectomy with Wecker's scissors being an ideal operation but difficult to practise. If the opaque portion of the lens be over 5½ mm. across, the lens is removed, the method of removal depending on the age of the patient. Under eight or ten years this will be by discission, repeated if necessary. Between ten and twenty years discission is done to hasten the opacification, and as soon as this is sufficiently advanced the lens is extracted by a modified linear method. Beyond twenty years the preliminary discission is to be followed by extraction with the upward flap operation without iridectomy.

Central or hard nuclear congenital cataract is to be treated in precisely the same way as the zonular.

Total congenital cataract is the form most frequently hereditary, often appearing some time subsequent to birth. If soft or liquid, the operation of choice is discission, which in case of undue irritation can be followed in a day or two by opening the anterior chamber with a paracentesis needle or lance-shaped keratome. The operation by suction is abandoned.

In cataracts of unusual forms each case must be considered by itself, and treated by the correction of ametropia, iridectomy, discission, or extraction according to the principles laid down for the other varieties.

Circumbulbar Dermoid Cysts.

Dr. J. Mitvalsky records the following conclusions (*Archives of Ophthalmology*, vol. xxi., No. 3) from a study of seventeen cases drawn from the clinic of Prof. Schöbl, of Prague: Such cysts on the surface of the body occur by preference in certain localities, and in greatest number in the neighborhood of the eyeball. Of these, fourteen were within the bony margin of the orbit, twelve at the outer, and two at the inner commissure. Two of the others were outside the bony margin and below the brow, and one lay below the external commissure at the margin of the zygoma. In structure these cysts vary widely, the wall always containing connective tissue, corium, and epidermis, and varying as to the presence of papillæ, muscle, and the various adnexa of the skin. Those showing hairs and glands were the most common. One case had sweat glands alone, and in one all the adnexa were absent.

The nearer the cyst is to fœtal life the smaller it is, and the more regular its structure and the distribution of the adnexa. It becomes distended with the secretion of the sebaceous and sweat glands and the cast-off epidermic scales. Either the distention is uniform, in which case the adnexa are equally

distributed over the cyst-wall, or particular portions yield to pressure, becoming thinned and devoid of glands or hairs; while other portions retain them in their original relations. In the latter form of distention some of the sweat glands may be so distorted as to prevent the escape of their secretion, so that they become separately distended.

A minority of the cysts show parts that are devoid of any epidermoidal lining, there being instead new-formed tissue composed of round, formative, and giant cells. This tissue shows a decided tendency to become cicatricial but the cicatrix does not become covered with epithelium. The ulcerative process which inaugurates these changes stands in no definite relation to the age of the individual, but the anterior, more exposed portions of the tumor are first involved in it.

The secondary pathological changes include the formation of hyaline cartilage, calcareous degeneration, ossification, a degeneration into a peculia tissue containing ganglion cells, hyperplastic arterial changes, and collections of lymphoid cells resembling follicles. The cyst-contents consist of fluid, atheromatous masses, epithelium, and oil either yellow or colorless.

These cysts have been in practice and in literature very frequently confounded with acquired retention-cysts or atheromata. Clinically, the dermoids are covered with movable skin, and lie close to the bone, upon which they may be movable or fixed; the atheromata move with the skin, and develop on the forehead, brow, and cheek, instead of the places of predilection for the dermoids. Dermoids with oily contents are transparent; atheromata are always opaque.

Acute Purulent Ophthalmia.

W. T. Holmes Spicer reports (*Royal London Ophthalmic Hosp. Rep.*, vol. xii., part ii.) an analysis of one hundred and fifty-eight cases, occurring almost entirely in adults, and treated in the Moorfields and St. Thomas hospitals. The most noteworthy results of the study of the subject are that it shows the extreme danger of postponing treatment—in other words, the great value of treatment; the increasing danger to the eye with increasing age; the weakening of the activity of the poison with the duration of the discharge; the care needed in the application of the protective shield to the sound eye; and, above all, the very great superiority of strong solutions of nitrate of silver over all other forms of local applications.

Prolapse of the Iris after the Simple Extraction of Cataract.

Dr. Parinaud (*Recueil d'Ophthalmologie*, ann. xiii., No. 6) speaks of this as one of the two principal drawbacks to extraction without iridectomy, the other being the difficulty about completely evacuating all remnants of cortex and the consequent risk of secondary cataract. Prolapse he considers as of two kinds, due in general to quite distinct causes. Primary prolapse depends on anatomical conditions, and especially the situation and inclination of the incision. Secondary prolapse is due to a sudden reopening of the wound after union has commenced.

The liability to prolapse is increased according as the incision is made in

the periphery, that is, close to the base of the iris, and by making its direction perpendicular to the surface of the cornea the entanglement of the iris in the wound is facilitated. The original Graefe incision was about the most liable to this accident, and could not be used without iridectomy. To prevent primary prolapse Parinaud recommends the making of the incision within the clear cornea, so as to secure a flap three or four millimetres in height. If, at the completion of the operation, the iris does not incline to return to its normal position with a central round pupil, it may be well to wait some minutes, making light friction over the eyeball through the closed lids, and then to make another attempt to bring it into position by lightly stroking it with the spatula. If this does not secure its proper reposition it is better to do an iridectomy at once. When the anterior chamber is opened Parinaud believes that eserine can exert but a brief and feeble influence in contracting the pupil and keeping the iris in place, and that its use is, therefore, dangerous, because it gives a mistaken sense of security.

Secondary prolapse is favored by movements of the patient or by disturbance of the dressings or violence to the eye. To prevent it absolute quiet must be enjoined for the first three days, and as a precaution he would do iridectomy without other indications if the patient were restless or had asthma, or chronic bronchitis, or were so so fleshy that any movement of the body would be liable to require considerable effort. When the prolapse has occurred and the staphyloma shows no tendency to disappear or diminish, instead of attempting to excise it he prefers to touch it with the galvanocautery at intervals of three or four days—a safe and easy treatment, very satisfactory in its influence in securing the firm healing of the part.

Hyperæsthesia Produced by the Application of Cocaine.

Dr. E. Millée reports (*Recueil d'Ophthalmologie*, ann. xiii., No. 6) a case in which the instillation of an ordinary solution of cocaine seemed to markedly increase the suffering caused by cataract extraction. The patient, a woman aged seventy-four years, submitted to a double extraction at Dr. Galezowski's clinic. Cocaine was freely used in the first eye, but the pain caused by the operation was so great that it was decided to try the other eye without it. It was done on the same day, and her behavior and statements indicated that the suffering was notably less with the second eye, although the operation was more prolonged. Both did well subsequently. The solution employed was used on other patients immediately before and immediately after it was used on this one, producing only the ordinary effects; her eyes were at the time free from any inflammatory complication.

Peritomy in Phlyctenular Pannus and Keratitis.

Dr. Verrey (*Revue Médicale de la Suisse Romande*, ann. xi., No. 11) reports twenty cases in which he resorted to this operation. The strip of conjunctiva removed was usually three or four millimetres in width, and the retraction of the parts widened the space of exposed sclera to six or seven millimetres, which space was scarified so as to sever all the vessels possible at the close of the operation. He believes the operation is not known and

practised as it should be, and claims for it the advantages of certainty in the result, rapidity of cure, and reduction to a minimum of the permanent corneal opacity remaining, and that its performance is quite within the ability of the general practitioner.

OBSTETRICS.

UNDER THE CHARGE OF

EDWARD P. DAVIS, A.M., M.D.,

PROFESSOR OF OBSTETRICS AND DISEASES OF INFANCY IN THE PHILADELPHIA POLYCLINIC;
CLINICAL PROFESSOR OF DISEASES OF CHILDREN IN THE WOMAN'S MEDICAL COLLEGE;
CLINICAL LECTURER ON OBSTETRICS IN THE JEFFERSON MEDICAL COLLEGE;
VISITING OBSTETRICIAN TO THE PHILADELPHIA HOSPITAL, ETC.

Intra-uterine Injections of Glycerin to Promote the Pains of Labor.

Pelzer (in the *Archiv für Gynäkologie*, Band. xlii., Heft 2) reports four cases of lingering labor in which intra-uterine injections of glycerin were employed to increase the vigor of uterine contractions. A suitable syringe is filled with glycerin and connected by a rubber tube with an intra-uterine catheter. Air is carefully expelled from the catheter, which is then introduced as far as possible upon the posterior wall of the uterus, and within the os and cervix. Several ounces of glycerin are injected; to prevent its speedy expulsion, the patient is put upon the side in Sims's position, or in the knee-chest position.

Ectopic Gestation, with the Birth of a Viable Child by Abdominal Section.

Bokelmann reports (*Centralblatt für Gynäkologie*, 1892, No. 46) the case of a multipara who had ectopic gestation. The pregnancy was intra-ligamentary, and fœtal movements and heart-sounds were plainly perceived. Signs of fœtal death appeared, the patient lost flesh and strength, and suffered from rise of temperature. Abdominal section was performed, the fœtal sac stitched to the abdominal wall, and the fœtus removed. The sac was irrigated with 4 per cent. solution of boric acid, powdered with benzoate of sodium, and tamponed with iodoform gauze. Uninterrupted recovery followed.

In the same journal, Veit reports ectopic gestation with total extirpation of the fœtal sac and rupture of the mesocolon through extensive adhesions. The lesions were repaired by catgut, and the patient made a good recovery. In discussing this case, Olshausen remarked that the belief commonly held that interference with the mesentery will result in gangrene of the intestine is without foundation; in his own experience he had seen post-mortem examinations on two patients dying the sixth and seventh day after abdominal

operations, in which the mesentery was extensively injured; in neither case was gangrene of the intestine present. MARTIN added his testimony to the truth of what Olshausen had stated, namely, that a considerable portion of intestine can be separated from its mesentery without interfering with its nutrition. SCHLANGE thought that gangrene of the intestine depended more upon peritonitis than upon separation of the mesentery.

RETROFLEXION OF THE PREGNANT UTERUS FOLLOWED BY GANGRENE OF THE BLADDER.

LANDFERMANN (in an Inaugural Dissertation, Bonn, 1892) reports the case of a primipara suffering from retroflexion of the pregnant uterus. Reposition was easily performed; during the following night the patient aborted spontaneously; the placenta was delivered with difficulty, and its removal was accompanied with a discharge of offensive urine from the uterus. The patient continued to discharge pieces of necrotic tissue coming from the bladder through the vesico-uterine fistula. Under irrigation with boric acid solution the parts gradually healed, and the incontinence disappeared. Microscopic examinations of the specimens discharged showed them to come from the mucous membrane of the bladder.

CHOLERA DURING PREGNANCY.

KLAUTSCH (in the *Münchener medicinische Wochenschrift*, 1892, No. 48) reports ten cases of cholera occurring in pregnant women. One of these patients was in the second month of pregnancy, one in the third, two in the fifth, one in the seventh, four in the eighth, and one in the ninth month. One patient died undelivered; one perished after incomplete abortion at the second month; three died after premature labor in the fifth and eighth months. Three patients were discharged undelivered, the fœtus remaining alive. One patient recovered after the birth of an eight months' fœtus, and one patient recovered after the birth of a child at term. The patients showed two stages of the disease: one attended by copious evacuations from the stomach and intestines; the second, the period of intoxication or asphyxia. The patients were usually taken ill at midnight, or early in the morning; the injection of saline fluid in the muscles of the thigh relieved the patients of many symptoms of collapse. This temporary relief was soon followed by the development of a typhoid stage characterized by delirium, perspiration, flushed face, and intense activity. A period of the deepest coma followed this stage. In this the pulse was strong, dicrotic, and the respiration superficial. Hemorrhage into the conjunctiva was often present, respiration became very irregular, and death supervened. In common with Baginsky and Weber, Klautsch could not observe that pregnancy modified the course of cholera in the slightest.

The fœtus usually perished in these cases during the stage of intoxication or asphyxia. The mothers usually complained that fœtal movements were violent during the first stage of the disease. As causes for fœtal death are given the enormous loss of water, the lessened tension of the circulation, and impaired respiration following the profuse discharges of the mother. Slavi-

ansky has also shown that the epithelium of the placenta is extensively impaired, that hemorrhages occur in the placenta, and that premature separation of the placenta as reported by Tipjakoff is also present. Bacteriological examination of the fœtus in these cases, made in Hamburg by Simmonds, failed to reveal the cholera bacilli in the fœtus; that ptomaines and toxine produced by the bacilli may poison the fœtus is more than probable.

A further peculiarity in these cases lay in the fact that the fœtus remained after death but a short time in the mother's womb; this was due in part to hemorrhages in the decidua, and also to the irritable condition of the mother's nervous system. The dead fœtus was usually expelled at the end of the stage of asphyxia and the beginning of the stage of typhoid delirium. The birth was characterized by a few strong pains, followed by failure in the expulsive forces, so that instrumental delivery was frequently necessary. After the delivery of the child, involution proceeded promptly as a rule. In one case, slight post-partum hemorrhage was observed. In this case it was very difficult to secure good uterine contraction.

The prognosis for the fœtus in cases of pregnancy complicated by cholera is excessively grave. For the mother, the occurrence of pregnancy does not seem to seriously complicate the prognosis of cholera.

As regards treatment, pregnancy was disregarded in selecting therapeutic measures. Calomel was given, intra-venous injections of saline fluid, Cantani's method was employed, and excessive vomiting was treated by all available means. As a stimulant, camphor was given, either in oil or combined with alcoholics and with tea and brandy. Mild albuminoid foods were employed.

Cholera and Lactation.

Galliard (in the *Gazette Hebdomadaire*, 1892, No. 46) reports ten cases of cholera attacking nursing women, and was inclined, from a study of these cases, to the belief that the condition of lactation renders more favorable the course of the acute disorder. He finds that among the ten cases, 50 per cent. recover, whereas in general among pregnant women, not more than 33 per cent. survive the cholera. Examination of his records shows that his patients were treated by lactic acid, by intra-venous transfusion, and by stimulants. In some of the cases the supply of milk failed for a short time, but was re-established. In other cases the breasts became painfully engorged, while others suffered from a papular erythema. In none of the cases which recovered was the secretion of milk permanently arrested.

Syphilis and Eclampsia.

Lang (in the *Archives de Tocologie*, 1892, No. 11) concludes a study upon this subject as follows: Syphilis predisposes to albuminuria and nephritis, and hence pregnant women who are syphilitic suffer more frequently from albuminuria. It has been found to be a predisposing and aggravating cause of eclampsia. Lang supports these conclusions by an extensive survey of the literature of the question, in which he finds that while in pregnant women in general $3\frac{4}{10}$ per cent. have a simple albuminuria, in pregnant syphilitic women $5\frac{55}{100}$ per cent. suffer in this way. In general $1\frac{5}{10}$ per cent. of all

pregnant women have albuminuria and tube-casts, while the same are found in 2½ per cent. of pregnant syphilitic women. While 88 per cent. of pregnant women having albuminuria and tube-casts suffer from eclampsia, 96 per cent. of pregnant syphilitic women having tube-casts and albumin are attacked by eclampsia.

The Toxicity of Blood Serum from Women suffering from Puerperal Eclampsia.

Tarnier and Chambrelent (*Annales de Gynécologie*, November, 1892), in a series of six cases of eclampsia, have investigated the toxicity of blood serum. The conclusions reached by them show that the blood serum of such patients is decidedly poisonous, and that its poisonous quality is in inverse ratio with that of the urine of such patients. There was no reason to suppose that the poisonous properties of the blood serum depended at all upon drugs given to these patients. A prognosis as to the gravity of a case of eclampsia may be based upon an investigation into the properties of the blood serum of the patient.

The Influence of Quinine upon the Milk and upon the Child of the Nursing Mother.

Oui (in the *Archives de Gynécologie*, November, 1892) reports the results of his study as to the effect of quinine upon the milk of the nursing mother and the health of her child. He finds that, even given in free doses, it does not affect the milk, and has no unfavorable influence upon the health and well-being of the child.

Tubal Moles and Tubal Abortions.

Sutton (in the *Medical Press*, 1892 No. 2793) describes, in a well-illustrated paper, tubal moles. They differ from uterine moles in several particulars: The uterine mole is more or less spherical; the amniotic cavity is of fair size, and occupies the centre of the mole. The embryo may or may not be present. It is very misshapen when recognized, and the umbilical cord is often œdematous.

A tubal mole in its early stage is spherical, but later becomes ovoid; in most cases the amniotic cavity is excentric. The amnion is easily ruptured, and permits the escape of the embryo. This explains the difficulty of finding the embryo where the mole has been discharged through a rent in the wall of the tube, or through an enclosed ostium with hemorrhage. The mole is found in the clot, and the embryo can be found, if all the blood be collected and the clots carefully washed. In hard, firm clots, in which no amniotic cavity is recognized, the specimen must be cut in sections and examined for villi of the chorion. This part in sections has clusters of circular bodies occurring in groups. Under a low power, they show an external layer of epithelial-like cells with irregular cells in the centre. Under a high power, the epithelium becomes distinct. The presence of a tubal mole is decisive proof of pregnancy. Blood and blood-clots, however, may be found in the tube when pregnancy is absent. Accurately speaking, the term "hæmato-salpinx"

should be applied to a non-gravid Fallopian tube distended with blood secondary to occlusion of the abdominal portion of the tube.

By "tubal abortion," we understand the discharge of an ovum through the ostium into the peritoneal cavity, or by rupture of the tube when the ostium is enclosed. Hemorrhage is usually more abundant in tubal abortion than where the tube ruptures and the ovum escapes into the broad ligament. The uterine decidua is usually discharged at the time of the tubal abortion. Sutton concludes his observations as follows:

"1. The transformation of a tubal ovum into a mole or apoplectic ovum is beyond doubt. 2. The majority of specimens described as examples of hæmato-salpinx are gravid tubes. 3. Rupture of a gravid tube and tubal abortion are the common causes of pelvic hæmatocele. 4. Mesometric rupture of a gravid tube is a common cause of pelvic hæmatoma. 5. To affirm that bands of fibrin resemble chorionic villi indicates great want of histological knowledge. 6. Every clot of blood found in a Fallopian tube is not a tubal mole."

Placenta Prævia complicated by Rigidity of the Neck of the Uterus; Incision of the Neck; Recovery.

The method of treating delayed labor from rigidity of the neck of the uterus, which has been recently advocated by Dührssen and others, was exemplified in a case reported by Coen in the *Nouvelles Archives d'Obstétrique et de Gynécologie*, 1892, No. 11. The patient was a primipara, five months pregnant. She had already suffered from severe hemorrhage. She was at once taken to the hospital, where examination disclosed placenta prævia. Under thorough antiseptic precautions, the Simon speculum was introduced, the cervix uteri grasped with tenaculum forceps, and two lateral incisions, extending to the vaginal junction, were made. The fœtus and placenta were removed, the uterus douched with an antiseptic solution, the incisions closed with catgut, and the uterus tamponed with iodoform gauze. An uninterrupted recovery ensued. The patient was subsequently examined, when it was found that the parts had healed perfectly. She was recovering from her condition of anæmia.

A Fatal Case of Puerperal Sepsis, illustrating the Mode of Infection and the Infective Agent.

Buchanan (in the *Glasgow Medical Journal*, December, 1892) describes a fatal case of puerperal sepsis in which death occurred the twenty-fourth day after delivery. Microscopic examination of the fluids and tissues of the body demonstrated the presence of the streptococcus pyogenes. Old adhesions, binding down the right tube and ovary, were present; on the left side, the appendages were matted together, and in the general mass was found the ovarian vein distended with brownish pus. This could be traced to the left cornu of the uterus, where many dilated veins joined it. The walls of these venous trunks were yellow and roughened, suggesting pus. The left Fallopian tube was dilated with pus, twisted and coiled upon itself, and had become converted into a series of spaces filled with pus. The uterus was sub-involuted, its internal surface fairly healthy, except the placental site, where an ulcer

was present. A probe, passed into the veins on the left side of the uterus, emerged in the ulcer at the placental site. The popliteal and posterior tibial veins of the right leg were blocked by thrombi. The source of the infection was not known. It had evidently been introduced at the placental site, and thence had spread through the veins at once.

Gonorrhœal Ophthalmia occurring In Utero.

Feis reports (*Centralblatt für Gynäkologie*, 1892, No. 45) the case of a multipara in whom tedious labor occurred; a discharge of yellowish-green fluid from the os uteri was present during labor. Fifty-four hours after rupture of the membranes a female child was born spontaneously. Upon examination, double ophthalmia was found present in marked degree. The gonococci were demonstrated in the pus from the eyes; the mother made an uninterrupted recovery, and the child subsequently recovered in an ophthalmic hospital.

GYNECOLOGY.

UNDER THE CHARGE OF

HENRY C. COE, M.D., M.R.C.S.,
OF NEW YORK.

Küster's Sign in Dermoid Cyst of the Ovary.

Latzko (*Centralblatt für Gynäkologie*, 1892, No. 48) calls attention to an observation made by Küster that dermoid cysts may develop originally in front of the uterus, and when dislocated from their position during the bimanual examination, return to it at once, just the same as normal ovaries. Ahlfeld, Freund, and Gottschalk confirm the observation, and regard this as a pathognomonic sign of the dermoid character of a cyst. The writer reports two cases of simple follicular cyst in which the tumor lay in front of the uterus, and behaved in precisely the same manner when it was displaced upward. He properly argues that this sign is not peculiar to dermoids, but may be observed in the case of any displaced organ or tumor within the peritoneal cavity, which has not been fixed by inflammatory adhesions. He concludes that the so-called "Küster's sign" is valueless as an indication that an ante-uterine tumor is a dermoid cyst.

Fibro-myoma of the Pelvic Connective Tissue.

Uerow (*Centralblatt für Gynäkologie*, 1892, No. 48) reports a case of double fibro-myoma, only one other specimen of which has been described by Hofmeier. The patient was forty-four years of age, a VI-para, and had suffered from pelvic and abdominal pains, prolapse of the pelvic organs, and menorrhagia since the birth of her first child, when she sustained a complete

laceration of the perineum. On examination she was found to have marked cystocele, with a pedunculated tumor, the size of a hen's egg, growing from the anterior vaginal wall just behind the right nympha. To the left of the median line there was a second tumor, sessile and covered by the vaginal mucous membrane; it could be traced upward into the pelvis behind the ascending ramus of the pubes, behind and to the left of the bladder. In attempting to remove the pedunculated tumor its attachments were found to be deeper than was supposed, since the pedicle sprang from the connective tissue lying between the cervix uteri, the bladder, and the lateral wall of the pelvis. Enterocele being carefully excluded, the tumor was dissected out, the hemorrhage being moderate. The other tumor, which was as large as an apple, had no pedicle and was dissected out from the subperitoneal space between the uterus and bladder, after which posterior colporrhaphy was performed, and the laceration through the sphincter was repaired by Tait's method, the beds of the tumors being previously closed by continuous catgut sutures. The result was entirely satisfactory. It was positively demonstrated that the tumors had no connection with any of the pelvic organs. An examination of the neoplasms showed that they were composed of a basis of connective tissue, in which were bundles of smooth muscle fibres. It was evident that they had sprung from the pelvic connective tissue, and had originally occupied a position within the pelvis, from which they had descended in consequence of the long-standing prolapse of the uterus and vagina. In view of Luschka's observation that smooth muscle fibres are not only normally present in the lower half of the broad ligament, but develop *de novo* in old cases of prolapse, it seems unnecessary to explain their occurrence in the tumors by reference to Cohnheim's embryonic theory.

Extirpation of Pyosalpinx after Perforation.

Winter read a paper on this subject at a recent meeting of the Berlin Obstetrical Society (*Centralblatt für Gynäkologie*, 1892, No. 48), in which he advocated cœliotomy for the removal of pus tubes that had previously ruptured into the vagina or rectum. The dangers to be apprehended in these cases are: 1. Escape of pus into the peritoneal cavity, which can be avoided by aspirating and washing out the sac before removal. 2. Opening into a hollow viscus, especially the rectum; but this is not greatly to be feared, for the fistulous opening is usually quite small, as it is shut off by inflammatory adhesions. 3. There are unusual difficulties in the technique, rendering the operation long and tedious, but these are best overcome by placing the patient in Trendelenburg's posture.

In the discussion which followed, Martin approved of the course adopted by the reader, and said that the prognosis was always good when the tube had opened into the rectum low down; if, however, the fistulous communication was high up in the large intestine, the perforation in the bowel must be sutured. If, after opening the abdomen, it was found that the gut would be extensively injured by separating the adherent sac, he advised puncturing the latter *per vaginam* (directing the needle with the fingers within the pelvis) closing the abdominal wound, and then incising and draining from below.

If, in removing such a pyosalpinx, pus escaped into the peritoneal cavity, it was generally sufficient to sponge it out without using general irrigation. The infectious character of the pus was not to be inferred from its foul odor alone, since stinking pus was sometimes sterile, while pus which seemed apparently harmless proved to be exceedingly virulent. He did not employ Trendelenburg's posture in these cases, but found it possible not only to separate firmly adherent sacs, but even to suture the intestine at the bottom of Douglas's pouch with the patient in the ordinary dorsal position. Martin affirmed in conclusion that he had not yet met with a case of pelvic suppuration in which vaginal hysterectomy offered any advantages over salpingotomy.

The Etiology of Hydrosalpinx.

Josephson (*Nordiskt med. Arkiv*, 1892, Band ii., Häft 5), as the result of a series of experiments on rabbits, in which he ligated the tube at different points (not sufficiently tight to interrupt the circulation), arrives at the following conclusions: 1. The lining membrane of the tube secretes a considerable amount of mucus, which is greatest in the distal portion. 2. This secretion is sufficient under favorable conditions to cause the development of a hydrosalpinx five times the size of the normal tube, without the presence of endosalpingitis. 3. Occlusion of the tube at its middle is sufficient to cause hydrosalpinx, which is always found on the uterine side of the obstruction and increases in size as the point of obstruction approaches the distal end. 4. The distal third of the tube tends to empty its contents into the peritoneal cavity, the middle third into the uterus.

Extirpation of the Spleen.

Lindfors (*Ibid.*) reports the case of a girl, aged twenty years, with enlargement and mobility of the spleen, attended with severe abdominal pains. There was moderate relative increase in the white blood-globules. Cœliosplenectomy was performed, the broad pedicle was ligated in six parts, and the tumor (which weighed thirty-six ounces) was removed without loss of blood. The patient made a good recovery.

Torsion of a Cystocele.

Rheinstaedter (*Centralblatt für Gynäkologie*, 1892, No. 36) reports the following rare complication of cystocele: On examining the patient he found the vagina almost filled by an elastic oval tumor, which was covered by the vaginal mucous membrane. The uterus could not be felt. There were no vesical symptoms. A sound introduced into the bladder proved that it was independent of the tumor. The patient was to be examined under chloroform anæsthesia, since it was suspected that complete inversion of the uterus might exist. When she presented herself again for examination the tumor had changed its appearance, being now a sac into which a sound was readily introduced *per urethram*, proving that the torsion which had previously been present had been relieved spontaneously.

The Ultimate Distribution of Nerve Fibres in the Human Ovary.

Von Herffl (*Zeitschrift für Geb. u. Gyn.*, Band xxiv., Heft 2) presents the results of his microscopical studies of this difficult subject, illustrated by beautiful colored plates. He concludes that the majority of the intra-ovarian nerves are distributed to the bloodvessels, their number being so great that they actually constitute an essential part of the ovarian stroma. They form a dense network, but do not anastomose freely, and supply the capillaries as well as the vessels with muscular coats. In the latter the terminal fibrillæ are in intimate relation with the muscle cells. Only a few nerve fibres end in the muscle cells of the hilus or between the cells of the germ epithelium. The writer has demonstrated the existence of follicular nerve fibres, which enter the largest follicles, ending in the membrana granulosa, but only surround the smallest follicles. Further investigation is necessary in order to determine if these nerves also penetrate the cumulus proligerus. Individual nerve fibres can be traced to the germ epithelia, to the muscle cells of the hilus, and to the inner vascular area. The presence of ganglion cells has not yet been positively demonstrated, though their existence in the hilus is regarded by the writer as highly probable.

Ventro-fixation and Alexander's Operation from an Obstetrical Standpoint.

Rivière (*Archives de Tocologie et de Gynécologie*, 1893, No. 1), after a comparison of the effect of impregnation upon the uterus when artificially anteverted, arrives at these conclusions: In order that the operation may be successful, the uterus must be completely replaced and must be permanently maintained in its normal position. Alexander's operation is preferable to ventro-fixation from the standpoint of the obstetrician, since the normal relations of the uterus are more nearly preserved. Even when the organ is adherent, it is better, he thinks, to perform cœliotomy, to break up the adhesions, and then to shorten the round ligaments according to Wylie's method. The advantages of the latter are that the mobility of the uterus is preserved and the attachments of the ligaments are not disturbed.

Vaginal Hysteropexy after the Method of Nicolétis.

Steinheil (Paris Dissertation; abstract in *Centralblatt für Gynäkologie*, 1892, No. 45) describes the operation in detail and reports fourteen cases. It is based upon the anatomical fact that the uterus is supported in the normal position not by its ligaments, but by its intimate relations with the pelvic floor. The various steps of the operation are as follows: After eliminating adhesions by previous preparatory treatment, the uterine cavity is curetted in order to cure the accompanying endometritis. The uterine arteries are ligated, if necessary; a circular incision is made around the cervix, and the latter is separated from its attachments as high as the point of flexion, *i. e.*, to the junction of the upper and middle thirds of the cervix. The cervix is now amputated, the stump is drawn downward, and the posterior half is

sutured to the middle third of the posterior vaginal wall, while the anterior half is covered by the lateral edges of the vaginal wound. The method is applicable to the cure of either retro-, ante-, or latero-flexion of the uterus. In three cases the result was perfect after an interval of over two years.

PÆDIATRICS.

UNDER THE CHARGE OF

LOUIS STARR, M.D.,
OF PHILADELPHIA;

ASSISTED BY

THOMPSON S. WESTCOTT, M.D.,
OF PHILADELPHIA.

Acute Osteomyelitis of the Pubes.

GIRARD, of Grenoble (*Congrès Français de Chirurgie*, 1892, *procès-verb.*), reports the observation of two children who were affected with a juxta-epiphyseal osteoperiostitis of the descending branch of the pubes. He concludes that, in the case of children, acute phenomena near the coxo-femoral articulation, simulating coxalgia and presenting general symptoms like those of an acute osteomyelitis, should induce the surgeon to curette as soon as possible the pubes, ischium, or ilium, according to the signs furnished by a careful local examination. Such an operation may prevent a suppurative coxitis, just as an early operation upon the femur or humerus may prevent suppuration in the knee or shoulder. Such prompt intervention is even more necessary, for the pubes takes part in the coxo-femoral articulation, without being separated from it by an articular cartilage.

Blood-changes in Syphilitic and Rhachitic Children.

THE careful researches of SCHIFF (*Wiener medizinische Presse*, 1892, No. 7, p. 270) relative to the body-weight of syphilitic children, the number of red corpuscles and leukocytes, and the proportion of hæmoglobin in the blood, show that after the disappearance of active syphilitic phenomena there follows a marked anæmia characterized by oligocythæmia and oligochromæmia. This oligocythæmia is noticed only after the disappearance of syphilitic eruptions, seeming to require for its production a complete impregnation of the system by the specific virus of the disease. The proportion of hæmoglobin depends in a certain measure upon the number of globules. At the beginning, when the oligocythæmia is little marked, the proportion of hæmoglobin is greater than at a later period, but the decrease in proportion of hæmoglobin has no definite connection with the number of corpuscles in any given case. The red corpuscles are pale from a deficiency of coloring matter; the number of leukocytes remains normal.

In rhachitis the number of red corpuscles is more or less normal, while that of leucocytes is more or less increased. The proportion of hæmoglobin is notably diminished—in some cases by as much as 35 per cent. This diminution bears no direct relation to the decrease in number of the red globules. A certain degree of oligochromæmia exists in rhachitis as well as in syphilis.

Bromoform in Pertussis.

Cassel (*Deutsche medicinische Wochenschrift*, 1892, No. 5, p. 100) presents the results of treatment of thirteen cases of pertussis by this drug. The dose was three to four drops three times a day for children under one year, and four to five drops for older patients. The total amount of the drug employed during the treatment of a case varied from ten to twenty grammes. The mean duration of the disease was 61.3 days, 45.9 days having elapsed before the cases came under treatment. The paroxysms diminished notably in frequency and intensity, but the duration of disease was not lessened. It may therefore be said that bromoform acts like all narcotics in diminishing the excitability of the respiratory mucous membrane, but it certainly exerts no specific action upon the disease. Perhaps with larger doses the paroxysms might be suppressed, but, in the author's judgment, the risk of intoxication is to be dreaded.

Creasote in Scrofulosis.

Sommerbrodt (*Berliner klinische Wochenschrift*, 1892, No. 26, p. 641), who was one of the earliest advocates of the treatment of tuberculosis by creasote, speaks highly of the same drug in the treatment of scrofula. The only precaution to be observed is not to give too small a dose. To children of seven years or over he does not hesitate to give as much as a gramme of creasote a day, either in capsule or dropped in milk or wine. This dose is reached gradually but quite rapidly, usually within ten days from the beginning of treatment. For children younger than six years, he commences with a drop a day, in milk or wine, and increases this until a daily dose of seven to ten minims is reached. The drug is best administered immediately after the meal, so as to avoid gastric irritation.

Intestinal Occlusion by Accumulation of Lumbricoids.

Paul Simon, of Nancy (*Revue Médicale de l'Est*, 1892, in *Journal de Médecine et de Chirurgie Pratiques*, September, 1892, p. 666), makes this rare accident, which is altogether ignored by many writers, the subject of a paper, he having succeeded in collecting six cases, one of which is personal. His study shows that, contrary to many assertions, intestinal obstruction by masses of lumbricoid worms is not exclusively an accident of adult age; four times out of six it has been observed in children—a fact which is in accord with the frequency of helminthiasis in childhood.

Clinically, the sudden onset, the abdominal pain, vomiting, the tinged or even bloody stools, and the final collapse, recall very closely the picture of intestinal invagination. This diagnosis was made in Simon's case in the absence of clear indications from the previous history of the patient. The

differential diagnosis, it appears, should be based upon a careful history of the attack, and especially upon the fact of expulsion of worms by the mouth or anus, which has been observed in several cases. Perhaps, also, the microscopical examination of the stools might prove of use in revealing the presence of eggs of ascarides.

The affection is very serious, only one of the six cases having recovered, and this as the result of surgical interference; and although operation has not always been successful, it seems to offer the only hope of relief. The administration of anthelmintic drugs has proved inefficacious after obstructive symptoms have actually declared themselves.

The Reflexes in Typhoid Fever of Children.

Albouze, in a recent thesis (*Etat des Réflexes dans la Fièvre Typhoïde chez les Enfants*, Lyon, 1892), deals with this interesting subject. After considering the significance of the absence of the reflexes, especially the knee-jerk, in childhood, he alludes to the contradictory results obtained by different observers, when the condition of these reflexes in typhoid fever has been the subject of investigation. These differences, he believes, can be explained by assuming that the researches have not been made at the same periods of the disease. As a result of numerous personal observations, he concludes that in typhoid fever in childhood, in the great majority of cases, the tendon reflexes are diminished in the acute stage, and increased in convalescence; and that from this sign an important prognostic indication may be drawn, a very feeble degree, or even entire loss of the reflexes, pointing to an extremely grave form of disease.

On the other hand, the disappearance of the exaggeration of the reflexes will indicate the absolute cessation of the action of the typhoid poison upon the organism.

The Rhythme de Déclanchement as a Prognostic Sign.

Perret, in a recent communication to the Société de Médecine de Lyon (*Gazette hebdomadaire de Médecine et de Chirurgie*, 1892, No. 35, p. 414) describes a peculiar alteration in the heart sounds which he has observed in seven children in the last stages of various tubercular affections. For want of a better name, he has designated the change as the *rhythme de déclanchement*, because of the suggestive sensation imparted to the ear. The peculiarity of the alteration lies in the fact that the two sounds of the heart are exceedingly close together—the systolic seeming almost to merge into the diastolic. As a result, the shorter interval of silence is almost imperceptible, while the longer has quite a marked duration. But more characteristic than this is the sensation given to the ear, which suggests the sudden letting-go of a spring stretched to its maximum, and this is doubled for the two sounds of the heart. In addition to this alteration of the rhythm, the pulse has been greatly accelerated in all the observations, the lowest count in any of the cases being not less than 140; and several times 168, 170, 180 beats, and even, in one case, 220 beats per minute have been recorded. At the same time these rapid pulsations had been perfectly regular. In all the cases the pulse has been small and the apex beat feeble. It is also to be noted that the sounds of the

heart were clear and free from adventitious sounds, except in one case of tubercular pericarditis. In two of the cases a fœtal rhythm for several days preceded this *rhythme de déclanchement*, which might have been a mere coincidence, or, as the author suggests, the latter might be a more exaggerated degree of the former, depending upon a more profound alteration of the nervous system of the heart.

All the seven cases in which this alteration of cardiac rhythm was observed were rapidly fatal, and therefore the author believes the sign to be a reliable indication of impending dissolution. Excepting in one case, where the appearance preceded the end by ten days, death has occurred within three days, and in several cases within a few hours. He attributes this modification of the heart's action to the influence of toxines generated by microbic activity and acting directly upon the intra-cardiac ganglia.

Comparative Measurements of the Liver in Childhood.

Dauchez (*Revue mensuelle des Maladies de l'Enfance*, September, 1892, p. 410), as a result of comparisons of the measurement of hepatic dulness in children of various ages, in both health and disease, makes the following recapitulation :

1. That the exact valuation of the dimensions of the liver in children is difficult owing to the involuntary contraction of the muscles, to the thin lower border, and to the oblique projection of the upper border.

2. That upon the anterior face of the organ the apparent extent of dulness during life is almost always one to two centimetres shorter than the true extent measured upon the cadaver before and after opening the abdomen.

3. That the superior border of the liver corresponds, in general, to the fifth costal interspace.

4. That in health the extent of vertical dulness of the liver increases with a fair regularity for each year. This growth, appreciable between the second and ninth years, then ceases almost completely, to begin again at the twelfth year. Until the beginning of the eighth year the vertical dulness in health, measured in centimetres, corresponds to the age of the child, plus one, two, or three centimetres. After eight or nine years the extent of dulness corresponds approximately to the age, sometimes, however, remaining a little below this figure.

5. In a pathological condition, enlargements of the organ may be divided into three classes: *a*, the projecting liver (catarrhal jaundice, congestion); *b*, the large liver (malaria, cardiac disease); *c*, the very large liver (amyloid disease, hydatid cysts, syphilis, fatty liver).

6. The difference in measurement between a healthy and diseased organ in children of the same age varies from two to four centimetres under the influence of slight causes (congestion, catarrhal jaundice), and from three to ten centimetres under the influence of profound alterations.

The Treatment of Acute Arthritis of the Hip in Infants.

In a short paper under this title, Dr. V. P. Gibney, of New York (*Medical Record*, October 29, 1892), reports two cases occurring in infants of ten months,

both of which made an excellent recovery. In the first child, the bony structures were not involved. It was really a peri-articular abscess, and, although deformity had arisen and the probabilities were that the process would have extended rapidly to the joint, an excellent recovery was obtained simply by free incision, drainage, and immobilization. In the second case the head of the bone was found loose in the cavity and was removed, and yet under the same treatment a perfect result was obtained. Both these cases were treated in an out-patient service, and required very little attention at home. The treatment which the author insists upon is early incision, thorough evacuation of all abscess cavities, correction of deformity and shortening at once, free drainage, and immobilization by plaster-of-Paris applied from the foot up over the hip and body to the axilla, and this dressing continued throughout the entire period of repair.

Laparotomy in the Tubercular Peritonitis of Infancy.

Aldibert (*Revue mensuelle des Maladies de l'Enfance*, 1892, p. 249), in a critical review of the literature of this subject, has collected 46 cases of peritoneal tuberculosis in children treated by operation, with a result of 4 deaths and 42 cures, of which 9 persisted after one year, and 2 after two years. None of the deaths was immediately due to the operation itself, an improvement always following the laparotomy even in those cases ultimately fatal, so that the mortality of operation was actually *nil*. If account is taken only of those cases proven to be tubercular by histological and bacteriological research, there are 18 cases with 18 cures, 2 of which persist after one year, 3 after one year and a half, and 1 after two years; in other words, one-third of the cures are reasonably assured. These statistics demonstrate the curability of tubercular peritonitis by laparotomy, and this has been corroborated by post-mortem examinations, or by the evidence obtained in subsequent abdominal operations upon subjects of tubercular peritonitis treated by this method. In a case reported by Le Bec, for example, where death occurred a year and a half afterward, the peritoneum was found absolutely clean and free from granulations.

The method of operation varies according to the nature of the case. In free and generalized ascites the incision should be median and sub-umbilical. The value of lavage is not yet definitely settled. According to the statistics of Koenig and those of the author, the cures were almost as numerous when no lavage was employed as when this was done. It is, however, certain that lavage serves a definite purpose in bringing away pseudo-membranous débris and arresting capillary hemorrhage. Sterilized boiled water saturated with boric acid at a temperature of 100° F. may be employed for this flushing. Other solutions have been used by different operators, *e. g.*, salicylic acid (3 per cent.), thymol, phenic acid (1 per cent.), and tincture of iodine (1 : 1000), without any toxic effects. Drainage is deprecated as exposing to the danger of interminable fistulas.

The conditions which offer little hope of benefit by operation are: 1. Generalized miliary tuberculosis, although when an acute eruption of miliary tubercle is confined to the peritoneum there is no positive contra-indication; and 2. Tuberculosis of the intestine. Coexisting pulmonary disease is only

to be considered a contra-indication when it is far advanced. Albuminuria, unless accompanied by other signs of tubercular nephritis, is not a contra-indication; and, indeed, in the two cases in which it was noted, it disappeared soon after the operation.

HYGIENE AND PUBLIC HEALTH.

UNDER THE CHARGE OF

EDWARD F. WILLOUGHBY, M.D.,
OF LONDON,

AND

CHARLES HARRINGTON, M.D.,
INSTRUCTOR IN MATERIA MEDICA AND HYGIENE, HARVARD MEDICAL SCHOOL.

Injurious Constituents of Rubber Articles with which Children of Different Ages come in Contact.

A. Bulowsky (*Archiv für Hygiene*, Bd. xv., Heft 2, p. 125) details a number of experiments made by him to determine what kinds of rubber articles may work injury to children. He disagrees with C. Ewald, who has maintained that vulcanized rubber nipples can injuriously affect infants by causing violent diarrhœas through formation of sulphuretted hydrogen gas, and shows that no such formation occurs. Rubber nipples, teething-rings, dolls, and other toys have often been found to contain varying amounts of lead, oxide of zinc, sulphate of barium, antimony, and other substances. Bulowsky examined seventeen gray rubber nipples, dolls, etc., and found one containing a small amount of lead, and one containing over 10 per cent. of sulphate of barium. They all contained from 32.18 to 58.66 per cent. of oxide of zinc. All of these articles sank in water. Thirteen black rubber nipples, rings, etc., yielded but small amounts of mineral matter, none contained lead or zinc, and all floated in water. A black rubber doll which sank in water yielded 47.03 per cent. of ash containing 14.48 per cent. of sulphate of lead. Five red-brown rubber dolls and toys, which sank in water, contained from 7.37 to 26.70 per cent. of sulphide of antimony. None of the above contained any arsenic.

Since small children have a strong tendency to carry everything to their mouths, experiments were made to determine what action the saliva may exert on these constituents of rubber, and what action, if any, may be exerted by milk on rubber nipples. Digestion of ten grammes of finely cut red-brown rubber, from a doll containing 26.70 per cent. of sulphide of antimony, with saliva for twenty-four hours gave no trace of antimony in the saliva. Digestion of eight grammes of another similar doll for forty-eight hours yielded also negative results, showing that antimony in rubber is harmless. Two similar experiments with a black doll containing lead gave traces of lead in the saliva. The ease with which chronic lead-poisoning is produced by small doses of lead must lead to the conclusion that such articles should be regarded as dangerous.

Experiments with a gray doll containing 58.66 per cent. of oxide of zinc, showed that saliva will take up traces of zinc. Sour milk was found to exert a similar action on rubber containing 33.71 per cent. of the same substance. According to Oesterlen, Heinzerling, Naunyn, Kobert, and others, small doses of zinc lead to chronic zinc-poisoning. Bulowsky's conclusions are that:

1. Rubber articles are harmless when they float, are elastic, and are of soft consistence.
2. The greater the specific gravity, the greater the ash and the less the value.
3. Black nipples and rings are harmless.
4. Black dolls which sink are dangerous on account of lead.
5. Red and red-brown dolls and toys are harmless.
6. All gray rubber articles, especially those which children put into their mouths to suck, are more or less harmful on account of the contained oxide of zinc.

The Cholera Epidemic at Havre.

Gibert, in a communication to the Academy of Medicine (*Bulletin de l'Académie de Médecine*, October 3, 1892), gives an account of the Havre epidemic up to September 27th, and the measures adopted to combat its spread. The disease was not imported by sea, nor did it come from Hamburg, for although the steamer Rugia arrived at Havre from Hamburg on August 23d with a number of cases on board—the first cases to enter the harbor—there had already been seventy-one fatal cases in the city. Nor was it brought from St. Petersburg, where the disease did not appear until August 9th. Cholera was known to exist at Hamburg on August 18th, when two fatal cases occurred, while, as was learned on investigation, the first death at Havre occurred on July 15th, the second on July 28th, and the third on August 3d; after the latter date the cases increased rapidly. The first cases came from the suburbs of Paris.

Of the first fifty patients received in the two hospitals at Havre, forty-eight died. No epidemic at Havre ever began with such fatal results. Up to September 26th, in one hospital, which was badly managed, there were thirty-six deaths in fifty-seven cases, twelve of which arose within the walls. At the other hospital, which had better accommodations, there were six hundred and four admissions and two hundred and forty-four deaths.

A large number of patients died very quickly after seizure, having had no diarrhœa or vomiting.

On August 19th active steps were taken to combat the epidemic. A number of day medical stations and a permanent station for night-work were established, the latter connected with all the police stations by telephone, and the hospital service was well organized. The physicians attached to the sanitary service called every two or three hours at the police stations for addresses where any cases might have occurred, and recorded their observations and directions as to proper measures to be taken.

Clothing was disinfected by steam, dwellings by corrosive sublimate, sulphate of copper, carbolic acid, and other chemicals, and a general washing

down of gutters, roofs, courtyards, etc., was carried out. The efficacy of the measures adopted was evident within a very few days.

The Cholera Epidemic in Kashmir in 1892.[1]

The Valley of Kashmir, surrounded by lofty mountains, is about 100 miles long by 20 at its greatest breadth, and about 5200 feet above the sea-level. The climate is variable: the average temperature in winter is 45°; in summer the sun is hot, and the noon temperature is about 90°. The spring is usually rainy; in summer it rains frequently, but the total rainfall is not high. Up to comparatively recent times, although cholera is perennial in the Punjab, the disease has appeared in the valley only when the epidemic in the Punjab has been of unusual severity; but now, owing to much-increased intercourse, Kashmir has, from a commercial point of view, become a part of the Punjab. Therefore, when in March and April cholera was raging in almost every part of the Punjab, it was anticipated that sooner or later the epidemic would invade Kashmir. The winter had been exceptionally mild, with very little snowfall, and was followed by a season of drought. During April and May, which months are usually rainy, scarcely any rain fell. Before the epidemic appeared the ground-water level was very low. The soil was infiltrated with decaying vegetable and animal matter, and presented a favorable nidus for the cholera poison whenever it might be introduced; and when this happened, the germs found other conditions favorable for the growth of an epidemic. The Kashmiris are notoriously filthy, and 125,000 of them are crowded into the city of Srinagar, which is in about the centre of the valley, is two miles long, and a mile and a half in its widest part. The city is built on both sides of the river Yhelum, and through the city also runs a canal, the Nalla Mar, which was once used as a source of water-supply, but now is but a string of cesspools. The population is crowded into 25,000 low, dirty houses, built irregularly on narrow lanes and alleys, which are used as latrines. There is no drainage, and the storm-water washes the filth and ordure into the Nalla Mar and into the river from which the drinking-water is obtained.

The general health of the people had been already much reduced by an epidemic of influenza. The difficulty of obtaining food and the Ramazan fasting had produced a condition of semi-starvation.

When the disease appeared at Srinagar the sale of unripe and rotten fruit and vegetables was forbidden; the people were urged to boil their drinking-water and to seek medical aid on the appearance of the first symptoms, and a circular giving full directions was extensively circulated. In spite of this, however, the beds and clothes of patients and the bodies of the dead were washed in the river and canals from which water was drawn for drinking and domestic purposes, and the dejecta of many cases in the boats on the river were thrown into the water, while drinking-water for the patients and others in the boats was taken from the same spot almost simultaneously.

During the epidemic it was observed that in the vast majority of cases the time of invasion was early morning, and that the eating of unripe fruit, or of

[1] The Cholera Epidemic in Kashmir, 1892. By A. Mitra, F.R.C.P., F.R.C.S., Chief Medical Officer, Kashmir. Calcutta: Thacker, Spink & Co.

ripe fruits in large quantity, raw cucumbers, fermenting buttermilk, raw raddish leaves and cabbage leaves, and putrid soft cheese, acted in a large number of cases as the exciting cause. The disease was confined principally to the poorer classes, though several cases occurred among those in the higher stations of life. The first outbreak of the disease was most malignant. It declined far more gradually than it began, and as it abated the type of the disease became less virulent until, finally, the last few cases were of extremely mild nature. The most congested parts of the town showed the largest number of seizures and deaths, and the progress of the epidemic was most rapid in the direction of the overcrowded parts where the sanitary conditions were necessarily bad, and slowest where the population was sparse.

In the treatment, the city was divided into districts; extra men detailed; one medical assistant was posted at each police station to attend urgent calls and a cholera hospital was opened. Out of a total strength of sixty medical assistants and attendants, who were constantly with the sick, but six were attacked, and five died.

The drugs used were numerous, and mostly in the forms of secret preparations, all of which appear to have been equally inefficient, the results leading to the conclusion that "we do not as yet know of a drug the administration of which can reduce cholera mortality in any appreciable degree."

From May 6th to August 15th there occurred in Srinagar 9041 cases, of which 5781 were fatal, and in the whole valley there were 16,845 cases, of which 11,712 terminated fatally.

Disinfection in Cholera Epidemics.

In a proclamation relative to cholera issued by the Prussian Government (*Deutsche Vierteljahrsschrift für öffentliche Gesundheitspflege*, xxiv, p. 554) the following instructions for carrying out disinfection are given. As disinfectants, are to be used:

1. Milk of lime (one part of lime to four of water). This is to be kept in a well-covered vessel and stirred up before being used.

2. Chloride of lime, freshly prepared and well kept. Evidence of its good quality is its strong peculiar smell. It can be used in powder form, or in solution of two parts in one hundred of cold water. The latter should be allowed to settle and the clear supernatant fluid be poured off.

3. Three per cent. solution of potash soap.

4. Solution of carbolic acid. The crude acid is not suitable. The so-called hundred per cent. acid is a convenient form, and is quite as efficient as the pure acid. One part is added with constant stirring to twenty parts of hot three per cent. solution of potash soap. If the pure acid is used it may be dissolved in simple water.

5. Steam under pressure of not less than a tenth of an atmosphere.

6. Boiling water. The articles to be disinfected to be boiled at least a half-hour, the water to be boiling constantly, and the articles completely covered.

Manner of using disinfectants. 1. The liquid discharges to be received as far as possible in vessels, mixed with about an equal volume of milk of lime, and allowed to remain in contact at least one hour. Chloride of lime may be used, two heaping tablespoonfuls of the powder to each half-litre, and well mixed. Disinfection is complete in fifteen minutes.

2. The hands and other parts of the body coming in contact with infected articles (discharges, soiled clothes, etc.) must be disinfected each time by thorough washing with solution of chloride of lime or of carbolic acid.

3. Bed and body linen and other articles of clothing which may be washed should be put into receptacles with disinfectants immediately on being soiled. Either the solution of soap or of carbolic acid may be used. In the former they should remain at least twenty-four hours, in the latter at least twelve hours before being rinsed and further cleaned. Steaming or boiling may also be employed, but in this case they must first be well wetted with the disinfectant, and placed in well-closed vessels or bags, or wrapped up in cloths well wetted with the disinfectant, in order that those who handle them before disinfection may be exposed as little as possible to the danger of infection. In any event, all who touch such articles should disinfect their hands as above.

4. Clothing which cannot be washed may be disinfected by steam. Leather articles may be wiped with carbolic or chloride of lime solution.

5. Wooden and metallic parts of furniture and similar articles should be carefully and repeatedly rubbed with cloths wet with carbolic or potash soap solution. The floors of sick-rooms should be treated in the same way. The rags used should be burned. Floors can be disinfected also by milk of lime, which may be washed off after two hours of contact.

6. Walls and woodwork may be whitewashed. After disinfection, the rooms should be left at least twenty-four hours unoccupied and well aired.

7. The ground, pavement, and gutters fouled by cholera discharges, or in which suspicious waste runs, can be disinfected by copious flooding with milk of lime.

8. In privies a litre of milk of lime should be poured daily down each seat opening. The seats should be washed with the potash soap solution. All receptacles in which excrement is deposited must be well limed inside and out after being emptied.

9. Articles which cannot be treated as above, or when steam apparatus or disinfectants are not to be had, should be put out in the sun and air for at least six days, and protected from rain.

10. Articles of little value, as straw bedding for instance, should be burned.

[The Bavarian Government issued practically the same instructions several days later.—C. H.]

Note to Contributors.—All contributions intended for insertion in the Original Department of this Journal are only received *with the distinct understanding that they are contributed exclusively to this Journal.*

Contributions from the Continent of Europe and written in the French, German or Italian language, if on examination they are found desirable for this Journal, will be translated at its expense.

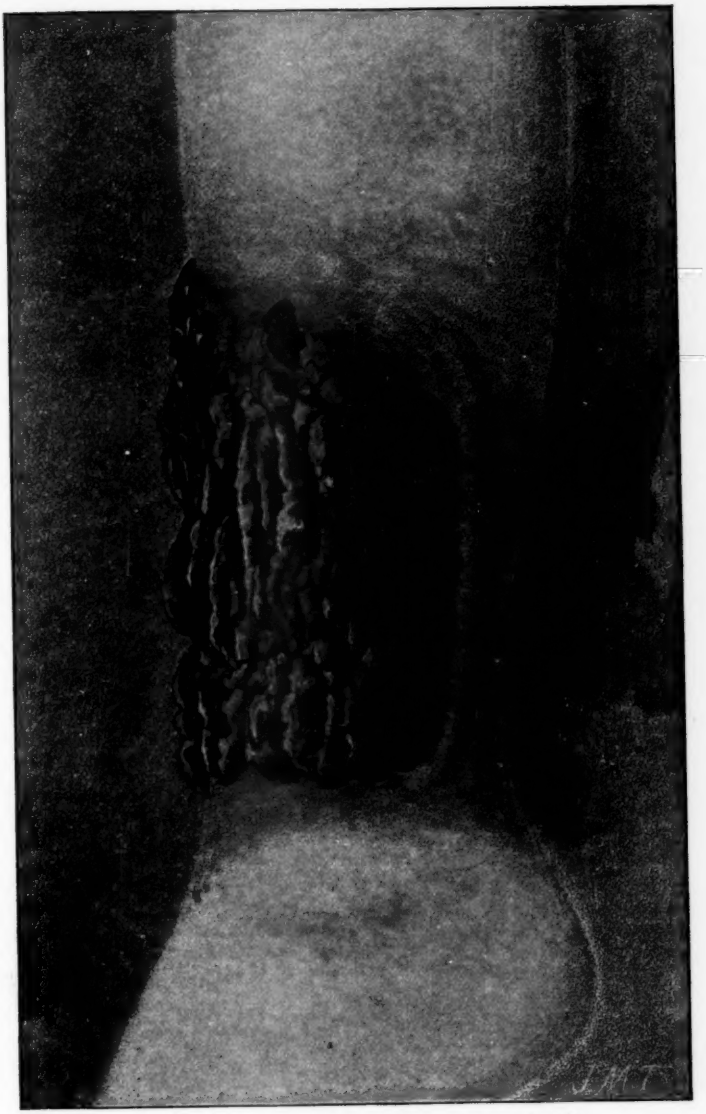
Liberal compensation is made for articles used. A limited number of reprints in pamphlet form, if desired, will be furnished to authors in lieu of compensation, *provided the request for them be written on the manuscript.*

All communications should be addressed to

DR. EDWARD P. DAVIS, 250 South 21st Street, Philadelphia, U. S. A.

Or

DR. HECTOR MACKENZIE, 77 Lambeth Palace Road, S. E., London, Eng.



Drawing of unusual form of disease of skin
in a case of Hysteria.